MICRO FOCUS

Open Enterprise Server 2018 SP3

iPrint Administration Guide

July 2021

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About This Guide

This guide describes how to install, configure, and customize Novell iPrint on Novell Open Enterprise Server 2018 SP3.

- Chapter 1, “Overview,” on page 11
- Chapter 2, “What’s New or Changed in Novell iPrint,” on page 21
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Audience

This guide is intended for anyone involved in installing, managing, and using iPrint as a print system.

Feedback

We want to hear your comments and suggestions about this manual and other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation to submit your comments.

Documentation Updates

For the latest version of the *iPrint Administration Guide*, visit the Novell Open Enterprise Server documentation Web site.

Additional Documentation

For documentation on installing and running the iPrint Manager Health Monitor, visit the Novell Open Enterprise Server documentation Web site.

1 Overview

Novell iPrint is a component in Open Enterprise Server. iPrint lets mobile employees, business partners, and customers access printers from a variety of remote locations by using existing Internet connections. This section describes the benefits and key features of iPrint.

- "Introduction to iPrint" on page 11
- "iPrint Component Overview" on page 12
- "Understanding Port Usage" on page 16
- "iPrint Solutions" on page 16
- "What's Next" on page 18

Introduction to iPrint

iPrint is Novell's solution to seamless integration of printing services. Regardless of whether users are working in an office building, telecommuting from home, or attending a sales meeting in another country, iPrint ensures that they can print documents quickly, easily, and reliably.

Using a web browser, users point to a Web page that displays the available printers to install. They click a printer to install the iPrint Client, download the printer's driver, and create a printer on the user's workstation. Then users can send documents to the printer from any application on the desktop.

With iPrint, mobile users no longer need to contact a busy network administrator to find out a printer's name, context, and the required printer driver. Instead, mobile users work within a familiar web browser to locate nearby printers through iPrint's Printer List Web page or maps created by the administrator. Companies can also reduce communication costs by printing documents to remote printers.

iPrint Uses Industry Standards

iPrint uses the Internet Printing Protocol (IPP), an industry standard, to eliminate the complexities of printing over the Internet and to make location-based printing a reality.

The benefits of IPP include the following:

- Uses the IP protocol
- Provides broad vendor support
- Works over local networks and the Internet
- Provides print data encryption (SSL, TLS)
- Provides a standard print protocol for all platforms (Linux, Macintosh, Windows, and so forth

For more information about IPP, see the documents on the Printer Working Group Website (http://www.pwg.org/ipp/index.html).

iPrint Benefits

In addition to the benefits of IPP, the Novell implementation of iPrint adds the following value:

- Printer driver download and installation
- Location-based printing
- Browser-enabled printer installation interface
- Customizable user interface
- Secure information transfer
- Universal Printer Driver (UPD) support
- Print accounting

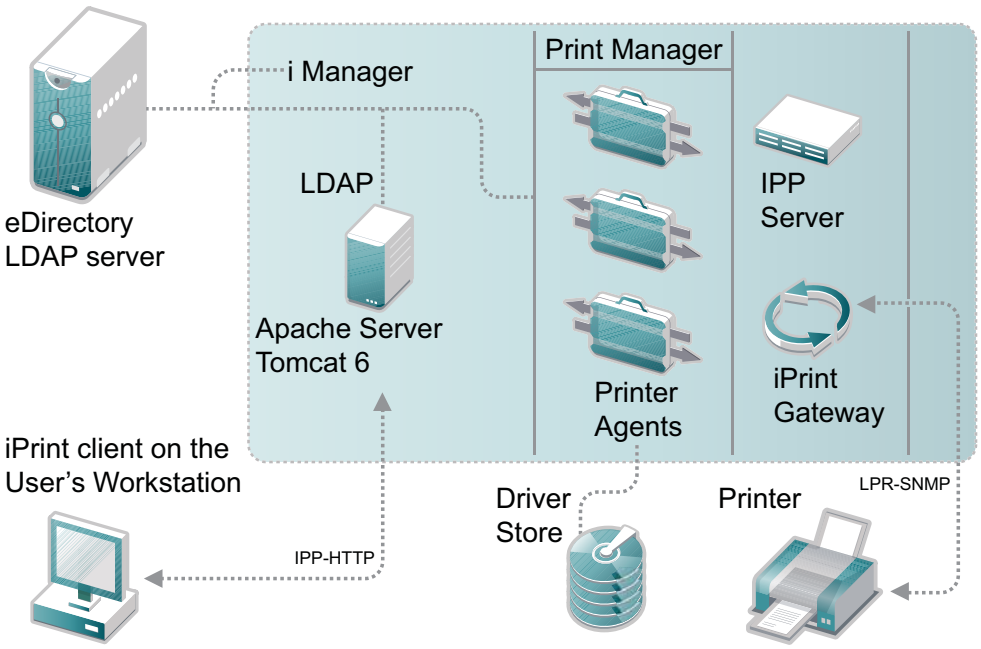
For secure printing needs, iPrint integrates with NetIQ eDirectory to ensure that only authorized users can access the printer. A user is required to authenticate with an eDirectory username and password. The print data is also encrypted to ensure that sensitive print data is kept secure and unaltered.

iPrint Component Overview

- "Print Manager" on page 13
- "Driver Store" on page 14
- "iPrint Client" on page 14
- "iManager" on page 16
- "Apache Web Server" on page 16

iPrint consists of three main components: the Print Manager, the Driver Store, and the iPrint Client. Other supporting components include the Apache Web Server, iManager, and eDirectory.

Figure 1-1 *iPrint Component Overview*

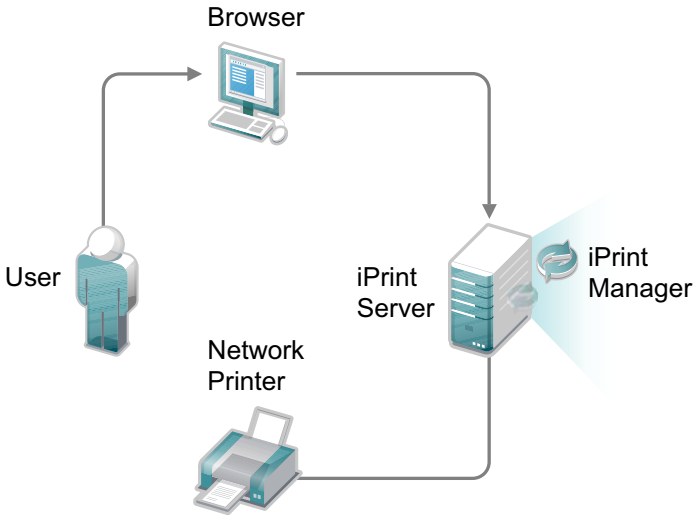


Print Manager

The Print Manager, which is an object in the eDirectory tree as well as software that runs on an OES server, provides a platform for Printer Agents on the server. As print jobs are submitted to the Print Manager, the print job is forwarded to a printer when the printer is ready.

A single Print Manager can handle print jobs for multiple printers. Depending on your network configuration (for example, remote locations), you can create additional Print Managers on other servers, but only one Print Manager can exist on any one server. The Print Manager user access control allows authorized users to print.

Figure 1-2 *Workflow through a Print Manager*



Printer Agent: The Printer Agent is an entry in the Print Manager database that represents the physical printer. When you create a printer, a Printer Agent is created in the Print Manager's database and a Printer object is added to eDirectory. The Printer Agent manages the processing of print jobs; answers queries from network clients about a print job or attributes of a printer; and provides SNMP information that is displayed in the Print Manager Health Monitor.

IPP server: The IPP server's main function is to handle IPP requests from the Web server and deliver the requests to the Print Manager or to the Broker.

iPrint Gateway: The gateway maintains communication with the printers. When a printer is ready, the gateway requests print jobs from the Print Manager for the printer. The print jobs are sent to the printer through LPR and the TCP/IP protocol. The gateway also uses SNMP to query printers to get their status and other printer information.

Driver Store

The Driver Store is an eDirectory object. Only one Driver Store is required on a network; however, depending on your network configuration, you can create additional Driver Stores. The fewer Driver Stores that are running, the better. With more Driver Stores, you need to keep track of which drivers run on which driver store.

The Driver Store is a repository of printer drivers for your print system. When the first user of a printer installs the printer, the Print Manager requests the associated printer driver from the Driver Store, and the Print Manager saves the printer driver to disk for future use. When the same printer is installed by another user, the Print Manager checks to see if there is an updated printer driver in the Driver Store. If an updated driver exists, the Print Manager caches it and subsequent printer installations use the newer drivers. However, printers already installed on workstations with the older driver are not updated. For additional information on the Driver Store, see TID 3281477 on the Novell Support Site.

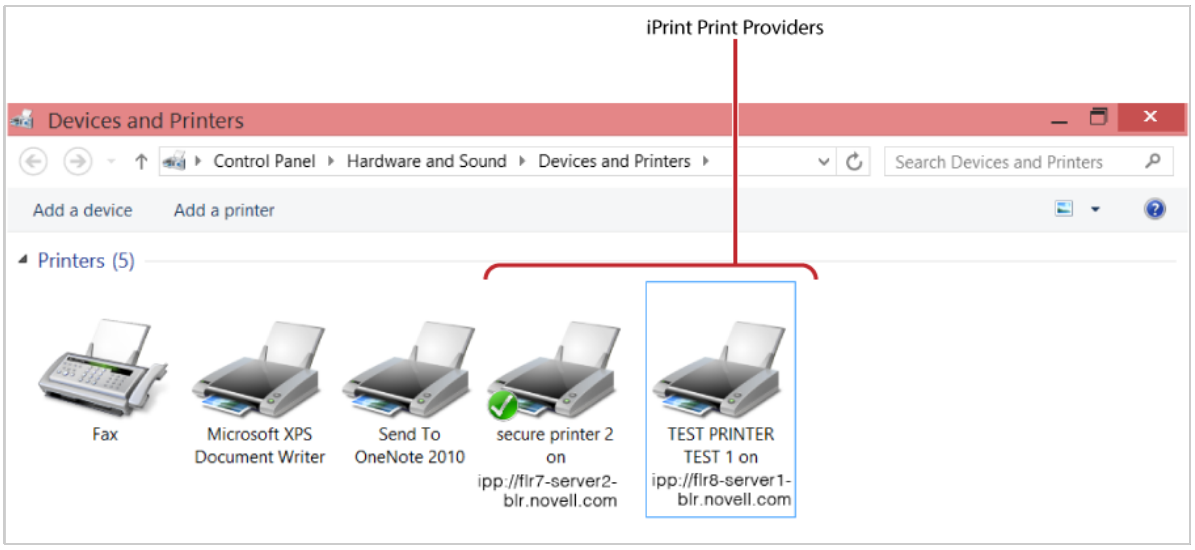
iPrint Client

The iPrint Client is available on the following platforms:

- Windows
- Macintosh

Windows iPrint Client

The Windows iPrint Client lets you install iPrint printers and configure iPrint on your workstation. It includes the following components:


iPrint Print Providers
Devices and Printers
Control Panel ▸ Hardware and Sound ▸ Devices and Printers ▸
Search Devices and Printers
Add a device
Add a printer
Printers (5)
Fax
Microsoft XPS Document Writer
Send To OneNote 2010
secure printer 2 on ipp://flr7-server2-blr.novell.com
TEST PRINTER TEST 1 on ipp://flr8-server1-blr.novell.com

- **Print Provider:** The iPrint Print Provider communicates directly with the Windows spooler, which takes print jobs from applications and delivers them to a print provider. Upon startup, the iPrint Client ensures that the iPrint Print Provider is the first one in the list of providers. When a print job is intended for an iPrint printer, the iPrint Print Provider delivers the print job to the Print Manager.
- **Browser plug-in:** The iPrint Client contains a browser plug-in for Mozilla-based browsers and Internet Explorer. The IE plug-in is an OCX-based plug-in that lets you install printers through your IE browser.
- **Client configuration:** Through the iPrint Client configuration screen, you can take advantage of several advanced client features. For more information on each of these features, see the associated documentation. These features include the following:
  - “Using a Proxy Server” on page 67
  - “Setting Up iPrint on Terminal Servers” on page 68
  - “Managing Passwords for Remote iPrint Servers” on page 68
- **Command line utilities:** The iPrint MS-DOS commands let you install iPrint printers without a web browser and capture LPT ports to iPrint printers. These commands are useful when you have legacy applications that require output to an LPT port, or when you want to add printers through a login script.

  For more information, see “Implementing iPrint by Using the Command Line” on page 69.

For more information, including client requirements, see “Windows: iPrint Client” on page 48.

Macintosh iPrint Client

The Macintosh iPrint Client contains a browser plug-in for the Safari web browser that lets you install printers through your web browser. For more information, see “iPrint Client Supported Browsers” on page 157.

The client integrates with CUPS and uses the CUPS local spooler to send print jobs to the Print Manager.

For more information, including client requirements, see “Macintosh: iPrint Client” on page 47.

iManager

You use iManager to create, configure, and manage your iPrint system. For complete management, including, uploading printer drivers and PostScript Printer Description (PPD) files, you must access iManager from a workstation on which the iPrint Client is installed. For more information, about iPrint tasks in iManager, see Chapter 3, “Installing and Setting Up iPrint on Your Server,” on page 23 and Chapter 10, “Managing Your Print System,” on page 109. For more information about iManager, see the *NetIQ® iManager Administration Guide*.

Apache Web Server

Apache is the Web server for iPrint. The Web server serves up HTML pages, handles secure (SSL/TLS) and non-secure requests, and utilizes LDAP for authentication.

Understanding Port Usage

iPrint can use any port specified on Apache; however, iPrint defaults to two primary ports:

- **Port 443:** All secure printing occurs through SSL over port 443.
- **Port 631:** All non-secure printing occurs over port 631.

  The iPrint Client also supports TLS. If your system is configured to use TLS, all secure and non-secure printing occurs over port 631.

  During the OES install of the iPrint software, the CUPS back-end components are disabled on the server to avoid port 631 conflicts. This is because iPrint uses CUPS to render print jobs before sending a job to the Print Manager, printing from the server itself by using CUPS, or if iPrint is not available.

iPrint Solutions

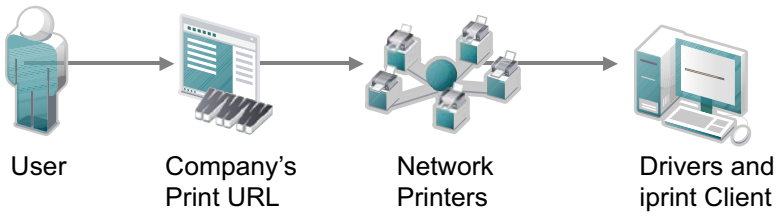
The following examples demonstrate how iPrint solves current business needs.

- “Printing Across the Internet” on page 16
- “Printing at a Remote Office” on page 17
- “Printing Instead of Faxing” on page 18
- “Accounting With iPrint” on page 18

Printing Across the Internet

Juan is an employee working at home who wants to send a document to a printer at his office. Juan does not want to dial in to the company’s network, but he has access to the Internet.

Figure 1-3 *How iPrint Helps You Print Across the Internet*

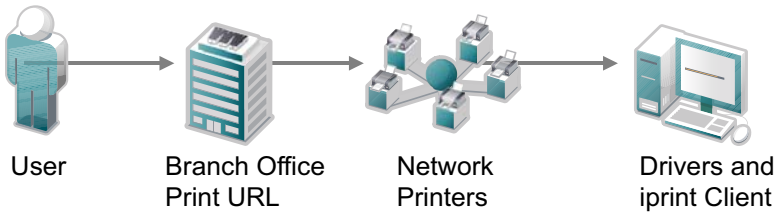


1. Juan points his web browser to the company's print URL.
2. From the Web page, Juan selects the printer to install. The iPrint Client is automatically downloaded and is installed on his computer. The printer driver is also downloaded and the printer is installed on his computer.
3. From any application on his home computer, Juan can now print documents directly on his company's printer.

Printing at a Remote Office

Olga is visiting her company's branch office in Paris. She needs to print a handout for an upcoming meeting. Olga knows she can print to the branch office printer, even though she does not know the printer's name, eDirectory context, make, model, or required printer driver.

Figure 1-4 *How iPrint Helps You Complete Print Jobs at a Remote Office*

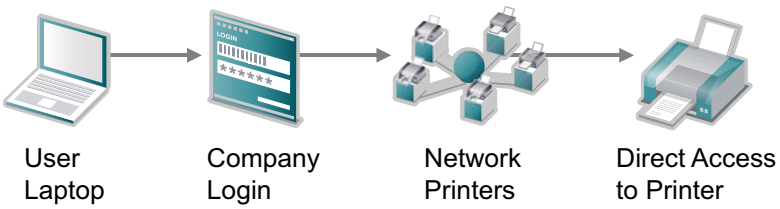


1. Olga connects her laptop to the company network, clicks the iPrint link on the company's intranet Web page, then clicks a link for the branch office she is visiting. A map displays the branch office and the iPrint printers.
2. Olga locates the office she is using and clicks the icon for the printer just outside her office.
3. The printer driver is downloaded and a printer is created in her laptop's Printer folder. She didn't need to install the iPrint Client software again because she had used iPrint previously at a different branch office.
4. From her application, Olga prints her handouts for the upcoming meeting.

Printing Instead of Faxing

Dan has just returned to his hotel room in Chicago after visiting with some clients. While checking his e-mail, he is reminded that he needs to submit a report to his manager in the corporate office in New York. The report is due by 8:00 a.m. Although he could send the report by fax, he wants a high-quality printout in color and he does not want to incur long-distance telephone charges.

Figure 1-5 *How iPrint Helps you Print Documents to Another Printer Instead of Faxing Them*



1. Dan uses his laptop to dial in to a local Internet Service Provider.
2. Using his web browser, Dan accesses the company's intranet Web page. Using the iPrint map pages, he locates an iPrint color printer adjacent to his manager's office.
3. After downloading and installing the printer driver, Dan uses his application to send the report to the printer.
4. Dan returns to the iPrint Web page and clicks the printer again to display printer management options. He monitors the printer job list to verify that his print job is complete.
5. Dan sends an e-mail to his manager telling him that the report is available at the printer.

Accounting With iPrint

Print Accounting: Novell iPrint integrates with third-party print accounting solutions to provide full support for accounting the print jobs including tracking all the print jobs and keeping a tab on the paper consumption. The print accounting feature enables the print administrator to have a clear understanding of who is printing what and when, and apply charge back capabilities if required.

Direct Print Accounting: A printer that is enabled for iPrint Direct sends print jobs directly to the printer instead of sending the job to the print server first. The print job is sent to the printer in LPR or raw 9100 format, depending on the setting in the gateway autoload command for the printer. Although this greatly reduces server communication, the ability to audit print jobs is lost. However, if you are running a third-party print accounting solution, Novell iPrint client can integrate with the third-party print accounting solution to provide support for accounting print jobs to direct printers.

To install and configure third-party print accounting solution, refer to their documentation.

What's Next

- Chapter 3, "Installing and Setting Up iPrint on Your Server," on page 23: Helps you install the server software and configure your print system.

- Chapter 5, “Installing and Setting Up iPrint on Client Workstations,” on page 43: Helps you deploy the iPrint Client to workstations and explains the features of the client.
- Chapter 8, “Customizing iPrint,” on page 95: With your print system set up and the client distributed to the workstation, you can focus on how your users can access and install iPrint printers.

2 What's New or Changed in Novell iPrint

This section describes enhancements and changes to Novell iPrint from Novell Open Enterprise Server (OES) 2018 SP3.

What's New (OES2018 SP3)

In addition to buf fixes, OES 2018 SP3 provides the following enhancement to iPrint:

iPrint Client 6.22.10 for Windows

The iPrint Client is upgraded to version 6.22.10 and allows Azure users to print to iPrint secure printers.

iPrint Client 6.15 for Mac

The iPrint Client is upgraded to version 6.15 and supports macOS Big Sur (Intel and Apple M1 architecture).

What's New (oes2018-sp1-2019-87 - Update 1 - iPrint - Recommended)

Auto Clearing a Printer Queue

A new feature is introduced to reduce paper and ink wastage by avoiding printing of stale jobs. Do you face paper wastage when a printer is under maintenance, offline, or when a paper is jammed? We have a solution to delete such pending jobs without intervention from the users.

What's New (OES 2018 SP1)

In addition to bug fixes, OES 2018 SP1 provides the following enhancements to Novell iPrint:

iPrint Client 6.17 for Windows

The iPrint Client is upgraded to version 6.17 and available on Windows 10, Windows 8.x, Windows 7, Windows Vista, Windows Server 2008 R2, and Windows Server 2012 R2.

- **Context Menu-based Desktop Printing:** Starting with this release, multiple (up to 15) documents in different formats can be selected for printing at a time. This feature can only be used if `iPrint for OES` is installed and configured.

  For more information, see "Windows: Context Menu-based Desktop Printing" on page 63.

iPrint Client 6.11 for Mac

The iPrint Client is upgraded to version 6.11 and available on macOS High Sierra (10.13), macOS Sierra (10.12), OS X El Capitan, 10.8 or later versions.

The iPrint clients can now automatically be updated on MAC workstations. This feature will be enabled from the next version of the client.

What's New (OES 2018)

In addition to bug fixes, OES 2018 provides the following enhancements to Novell iPrint:

iPrint Client 6.11 for Windows

The iPrint Client is upgraded to version 6.11. This client is also available on Windows 10, Windows 8.x, Windows 7, Windows Vista, Windows Server 2008 R2, and Windows Server 2012 R2 with the following feature:

- **Context Menu-based Desktop Printing:** Provides an option to print from the context menu. You can print from any format and no longer need to install printers or drivers on your desktop. This feature can only be used if `iPrint for OES` is installed and configured.

  For more information, see "Windows: Context Menu-based Desktop Printing" on page 63.

iPrint Client 6.09 for Mac

The iPrint Client is upgraded to version 6.09 and available on macOS High Sierra (10.13), macOS Sierra (10.12), OS X El Capitan, 10.8 or later versions.

3 Installing and Setting Up iPrint on Your Server

- "Installing iPrint Software" on page 23
- "Installing and Configuring iPrint Services through YaST" on page 24
- "Setting Up iPrint" on page 26
- "Migrating to Novell iPrint" on page 36
- "Setting up iPrint on the NSS File System" on page 37
- "What's Next" on page 39

Installing iPrint Software

When installing Novell Open Enterprise Server (OES), if you choose iPrint, you can skip the instructions in this section and proceed to "Setting Up iPrint" on page 26, because the iPrint software components are automatically installed on the server during OES installation. The Common UNIX Printing System (CUPS) software is also installed. However, even though the CUPS software is installed, it is disabled to avoid port 631 conflicts.

In order to disable iPrint services, you need to disable the Print Manager and the Driver Store. For more information on disabling iPrint services, see "Disabling OES 2018 SP3 Services" in the OES 2018 SP3: Installation Guide.

iPrint installs the following RPM packages:

Table 3-1 *iPrint RPMs*

RPM Name	Description
`novell-iprint-iprntman-wrapper`	Contains the Novell iPrint Command Line Management Tool, which has the Web-Based Enterprise Management (WBEM) system for managing Print objects.
`yast2-novell-iprint`	Contains the YaST installation on RPM for iPrint.
`novell-iprint-server`	Contains the core Print Manager, Driver Store, and other iPrint components.
`novell-iprint-client`	Contains the iPrint Clients for Linux, Macintosh, and Windows.
`novell-iprint-management`	Contains the iManager plug-in.
`novell-iprint-iprntman`	Contains the Web-Based Enterprise Management (WBEM) system for managing core iPrint components.

RPM Name	Description
novell-iprint-migration	Contains the Novell iPrint Migration service.

Installing and Configuring iPrint Services through YaST

Follow this procedure to install and configure the iPrint services on an OES server in either of the following cases:

- Installing iPrint with a bundle of products during OES installation.
- Installing only the Novell iPrint service and its dependencies on an existing OES server.

Before you begin, ensure that you have the required eDirectory admin credentials to proceed, if you are installing iPrint after installing OES.

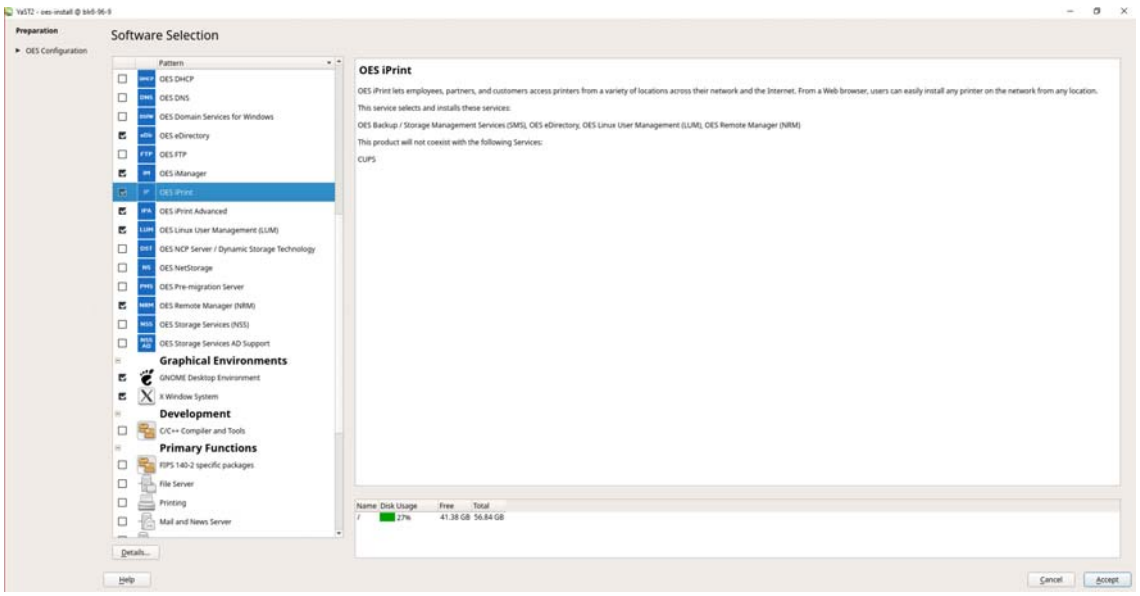
1. Launch YaST, using one of the following methods:

   From your Desktop: Click **Computer > More Applications > System > YaST**.

   From your Terminal: Run the `yast2` command on the server console.

2. Click **Group** > **Open Enterprise Server** > **OES Install and Configuration**.

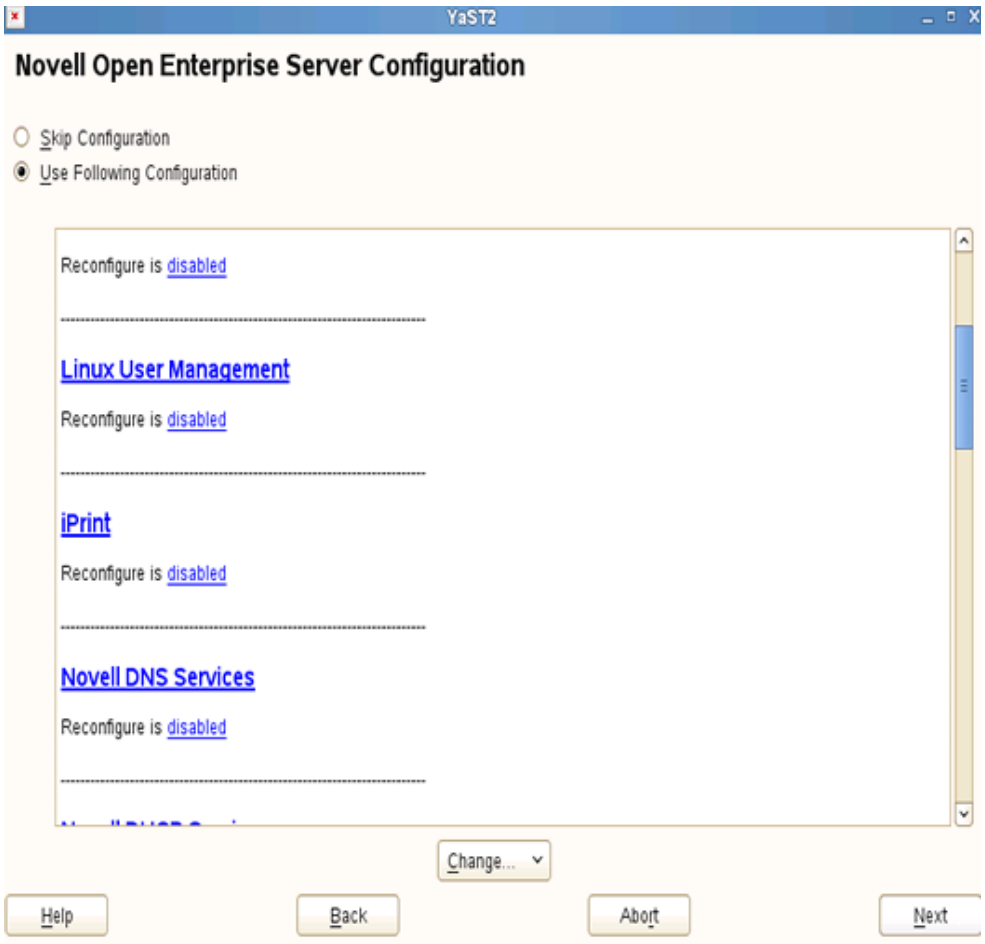
3. Select **Novell iPrint** from the software patterns listed.


Software Selection
Preparation
OES Configuration
Pattern
OES DHCP
OES DNS
OES Domain Services for Windows
OES eDirectory
OES FTP
OES iManager
OES iPrint
OES iPrint Advanced
OES Linux User Management (LUM)
OES NCP Server / Dynamic Storage Technology
OES NetStorage
OES Pre-migration Server
OES Remote Manager (NRM)
OES Storage Services (NSS)
OES Storage Services AD Support
Graphical Environments
GNOME Desktop Environment
X Window System
Development
C/C++ Compiler and Tools
Primary Functions
FIPS 140-2 specific packages
File Server
Printing
Mail and News Server
Details...
OES iPrint
OES iPrint lets employees, partners, and customers access printers from a variety of locations across their network and the Internet. From a Web browser, users can easily install any printer on the network from any location.
This service selects and installs these services:
OES Backup / Storage Management Services (SMS), OES eDirectory, OES Linux User Management (LUM), OES Remote Manager (NRM)
This product will not coexist with the following Services:
CUPS
Name Disk Usage Free Total
/ 27% 41.38 GB 56.84 GB
Help
Cancel
Accept

IMPORTANT: By default, the iPrint dependency packages are selected.

4 Click **Accept**.

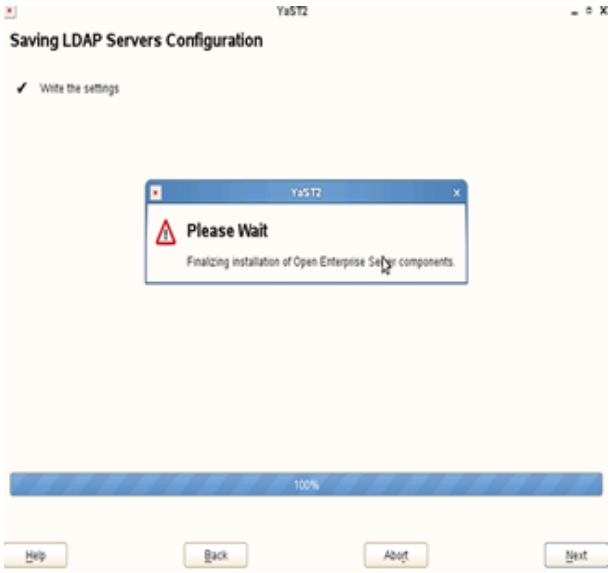
The subsequent pages allow you to configure iPrint on OES.



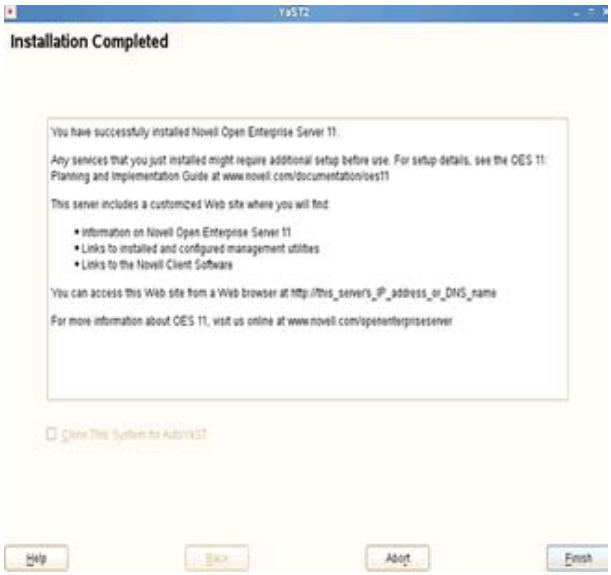
5 To change the default configuration settings for iPrint, click the **iPrint** service, or click **Next** to continue with the default configuration.

If you are installing iPrint after installing OES, you are prompted to enter the eDirectory admin password. Enter the password and click **OK** to proceed. Enter the eDirectory parameters in the page that is displayed and click **Next**.

6 Read the confirmation message on the LDAP Server settings for the iPrint configuration getting successfully saved, as you specified on your OES server.



7 The system displays a confirmation message to indicate a successful install.


YaST2
Installation Completed
You have successfully installed Novell Open Enterprise Server 11.
Any services that you just installed might require additional setup before use. For setup details, see the OES 11 Planning and Implementation Guide at www.novell.com/documentation/oes11
This server includes a customized Web site where you will find:
• Information on Novell Open Enterprise Server 11
• Links to installed and configured management utilities
• Links to the Novell Client Software
You can access this Web site from a Web browser at http://this_server's_IP_address_or_DNS_name
For more information about OES 11, visit us online at www.novell.com/openenterpriseserver
Help
Abort
Finish

Setting Up iPrint

- "Accessing and Using iManager" on page 27
- "Creating a Driver Store" on page 28

- "Changing the eDirectory Server Assignment" on page 29
- "Managing Printer Drivers" on page 30
- "Managing Driver Stores" on page 32
- "Creating a Print Manager" on page 33
- "Creating a Printer" on page 36

After you install the Open Enterprise Server components on your server (including iPrint), you need to start and configure iPrint. For complete management, including uploading printer drivers and PPD files, you need to access iManager from a workstation with the iPrint Client installed. For a review of supported browsers and iPrint operations, see Appendix A, "Supported Browsers for iPrint," on page 157.

- ❒ Run iManager from the operating system in which you want to upload the print driver. For example, to upload a Windows 7 print driver, you must run Internet Explorer from a Windows 7 workstation. For more information, see the iManager Web site (http://www.netiq.com/documentation/imanager/).
- ❒ Create a Driver Store: A Driver Store is a repository where administrators add printer drivers and PPD files used for their print system.
- ❒ Add printer drivers and PPD files: To save the extra step of associating driver files when you create printers, you should add printer drivers to the Driver Store before you create printers.
- ❒ Create a Print Manager: The Print Manager communicates print job information between users and printers while also providing print job management, security, and spooling.

  For more information, see "Creating Additional Print Managers" on page 119.
- ❒ Create Printers: This task helps you create printers for your system and associate printer drivers.

  For more information, see "Creating Additional Printers" on page 124.

Accessing and Using iManager

iManager is a Web-based administration console that provides secure, customized access to network administration utilities and content from virtually anywhere you have access to the Internet and a web browser.

For information on accessing iManager, see "Accessing iManager" in the *NetIQ® iManager Administration Guide*.

For iManager access and complete use of all its features, use one of the web browsers listed below. Although you might be able to access iManager through a web browser that is not on the list, we do not guarantee or support full functionality with any browser other than the following:

- Microsoft Internet Explorer 10 or later
- Mozilla Firefox

In order for some iManager wizards and help systems to work, you must enable pop-up windows in your web browser. If you use an application that blocks pop-up windows, you must disable the blocking feature while working in iManager or allow pop-ups from the iManager host. The mobile iManager functions similarly to the Web-based iManager, except that it does not allow you to upload drivers and to create profiles.

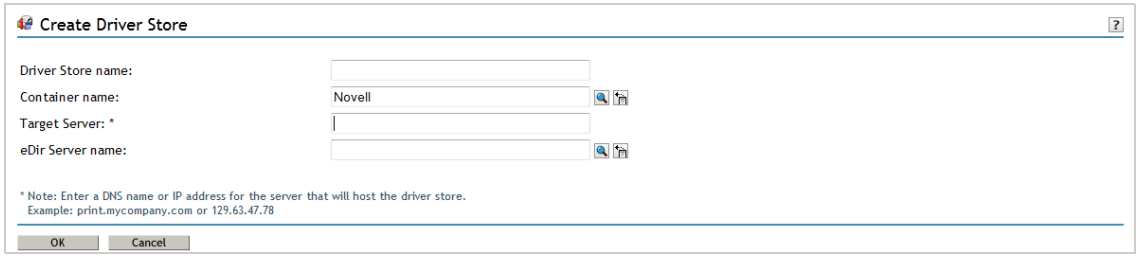
For information on using the iManager interface, see “Navigating the iManager Interface” in the *NetIQ® iManager Administration Guide*.

Creating a Driver Store

You need only one Driver Store for your print system; however, depending on your network setup, you can add additional Driver Stores. You must create a Driver Store in order to create a Print Manager. For more information about placing Driver Stores on your network, see “Creating Additional Driver Stores” on page 136.

1 In iManager, click **iPrint** > **Create Driver Store**.

The Create Driver Store dialog box is displayed.



2 In the **Driver Store name** field, specify the name of the Driver Store object.

3 In the **Container name** field, specify the name of the container where you want the Driver Store object to reside.

TIP: Use the Object Selector to choose the container object from an object list. For more information on using the Object Selector,“Using the Object Selector”*in the NetIQ® iManager Administration Guide*.Use the History Browser to browse through the list of objects you used recently.

---

4 In the **Target Server** field, specify the DNS name or the IP address of the server where you want the iPrint Driver Store to reside.

If you have set up the cluster, specify the DNS name or IP address of the iPrint resource.

5 In the **eDir Server name** field, specify an eDirectory server that you want the Driver Store to communicate with.

For fault tolerance, you can specify more than one eDirectory server from the same tree. For more information, see “Changing the eDirectory Server Assignment” on page 29.

6 Click **Cancel** to exit without saving any of your changes.

or

Click **OK** to save your changes.

IMPORTANT: When you try creating a Driver Store for the first time, you might receive a certificate error. You should accept the certificate in order to proceed with creating the Driver Store.

After the Driver Store is created, the Driver Store daemon is loaded on the server, and you can start uploading drivers.

NOTE: To check the status of the Driver Store, use the `systemctl status novell-idsd.service` command.

Changing the eDirectory Server Assignment

If you need to change the eDirectory server assignment for the Print Manager or Driver Store, edit the Directory Services Server1= entry in the corresponding configuration file, *`print_manager_name`*`.context.ipsmd.conf` or `idsd.conf`, located in `/etc/opt/novell/iprint/conf`.

NOTE: As many as two additional servers can be specified, using Directory Services Server2 and Directory Services Server3. Directory Services Server1 is considered to be the primary eDirectory server. Directory Services Server2 and Directory Services Server3 are considered to be secondary servers.

For example, editing the Directory Services Servers 1, 2, and 3 entries for the `idsd.conf` file looks like this:

```
cat /etc/opt/novell/iprint/conf/idsd.conf {

DSServer1 server1.blr.novell.com

DSServer2 server2.blr.novell.com

DSServer3 server3.blr.novell.com

IDSObjectDN CN=ds-102-59-2,O=novell

IDSObjectPasswd yhvuevdbumpuvfuklnqqapvipxvemh

IDSHostAddress 100.100.100.100

}
```

Editing the Directory Services Servers 1, 2, and 3 entries for the `ipsmd.conf` file looks like this:

```
cat /etc/opt/novell/iprint/conf/ipsmd.conf

DSServer1 server1.blr.novell.com

DSServer2 server2.blr.novell.com

DSServer3 server3.blr.novell.com

PSMObjectDN CN=psm-dns-name,O=novell

PSMObjectPasswd pgtnlafnfekh

PSMHostAddress server1.blr.novell.com
```

Managing Printer Drivers

A printer driver or PostScript Printer Description (PPD) file is software that directly supports a physical printer, enabling it to carry out its functions.

Hardware vendors develop printer drivers and PPD files, which are specific to each printer. Most printers require different printer drivers for each operating system they interact with. You can use iManager to view a list of printer drivers and PPD files you have uploaded to the Driver Store. On Windows Vista, Windows 7, Windows 8, Windows 8.1, and Windows 10 platforms, you can also upload printer drivers by using a command line option. For more information, see "Implementing iPrint by Using the Command Line" on page 69.You can add printer drivers and PPD files from diskettes, CDs, and the workstation operating system.

The Driver Store daemon must be running in order to add printer drivers, and the iPrint Client must be installed on a Linux or Windows workstation. To install the client, go to http://dns_name or IP_address/ipp and click the **Install iPrint Client** link. For more information on installing the client, see Chapter 5, "Installing and Setting Up iPrint on Client Workstations," on page 43. For a review of supported browsers and driver upload operations, see "Supported Browsers for the iPrint Plug-In and iManager" on page 157.

To add printer drivers to the Driver Store:

1. In iManager, click **iPrint** > **Manage Driver Store**.

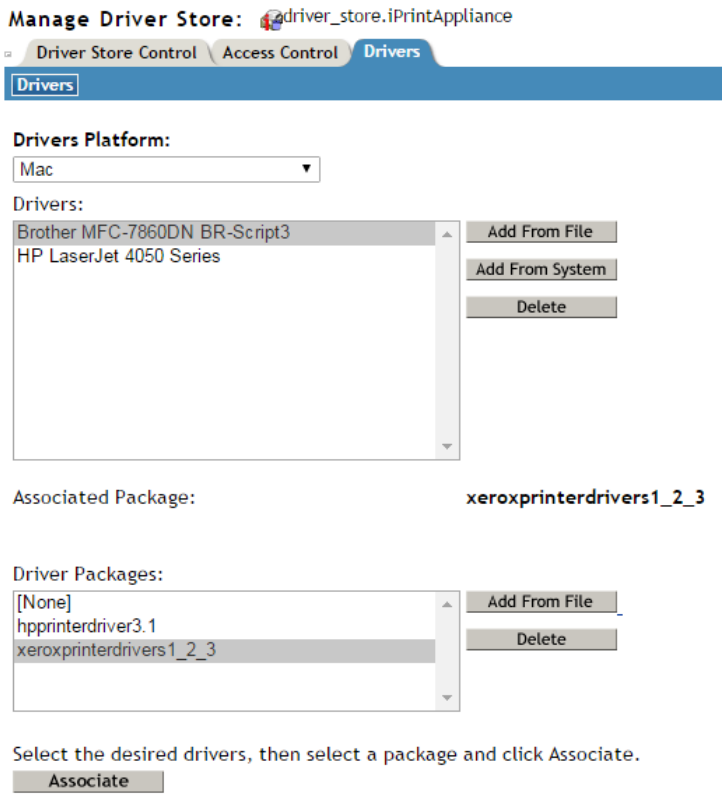
2. Specify the name of the iPrint Driver Store to which you want to add printer drivers.
3. Select the **Drivers** tab.
4. Use the **Drivers Platform** drop-down list to select the client platform for which you want to upload the printer driver.
5. Do one of the following:
   - Click **Add from File** to add printer resources from a printer driver `.inf` file or PPD file.

     Mac: The standard file format is PPD (Postscript Printer Description) file.

     Windows: The standard file format is `.inf` file.
   - Click **Add from System** to add drivers from the workstation where you are running iManager.

     The drivers installed on your workstation are made available to be uploaded to the Driver Store. You can upload only drivers for the platforms installed on your workstation.
6. Select a driver, then click **OK**.

   6a (Conditional) If the client platform is Mac, new options are available as follows:.



Associated Driver Package: Displays the driver package, if any, associated with the selected drivers. This is the dependent package for the driver and is installed with the printer. This option is available only on a Mac machine.

6a1 Perform one of the following actions:

- Click **Add from File** to add printer driver package to the list from a .pkg or .dmg file that you obtain from the printer vendor.
- Select the driver from the **Drivers** list, then select the package from the **Driver Packages** list and click **Associate**. This associates the selected driver to the package. When a user installs the printer, the driver and its associated files from this package are installed on the workstation. If the dependent files are missing, the printer installation fails.
- To disassociate a driver from the package, select the driver and select None from the Driver Packages list and click Associate. The driver is no longer associated to any package.

7 Click **OK** to save your changes.

or

Click **Cancel** to exit without saving your changes.

8 Click **Refresh** to refresh the screen and display the changes you just made.

If you need to install an iPrint printer but cannot use a web browser, you can use the `iprntcmd.exe` command at a DOS prompt. For more information, see "Using iprntcmd.exe to Install iPrint Printers" on page 70. You can also install driver files from a Linux console prompt by using the `iprntcmd` command. For more information, see "Using iprntcmd on Linux and Macintosh" on page 76.

To delete printer drivers from the Driver Store:

1. In iManager, click **iPrint** > **Manage Driver Store**.
2. Select the **Drivers** tab.
3. Read the list of existing printer drivers displayed in the **Current Drivers** panel.
4. Select a driver, then click **Delete**.
5. Click **OK** to save your changes

   or

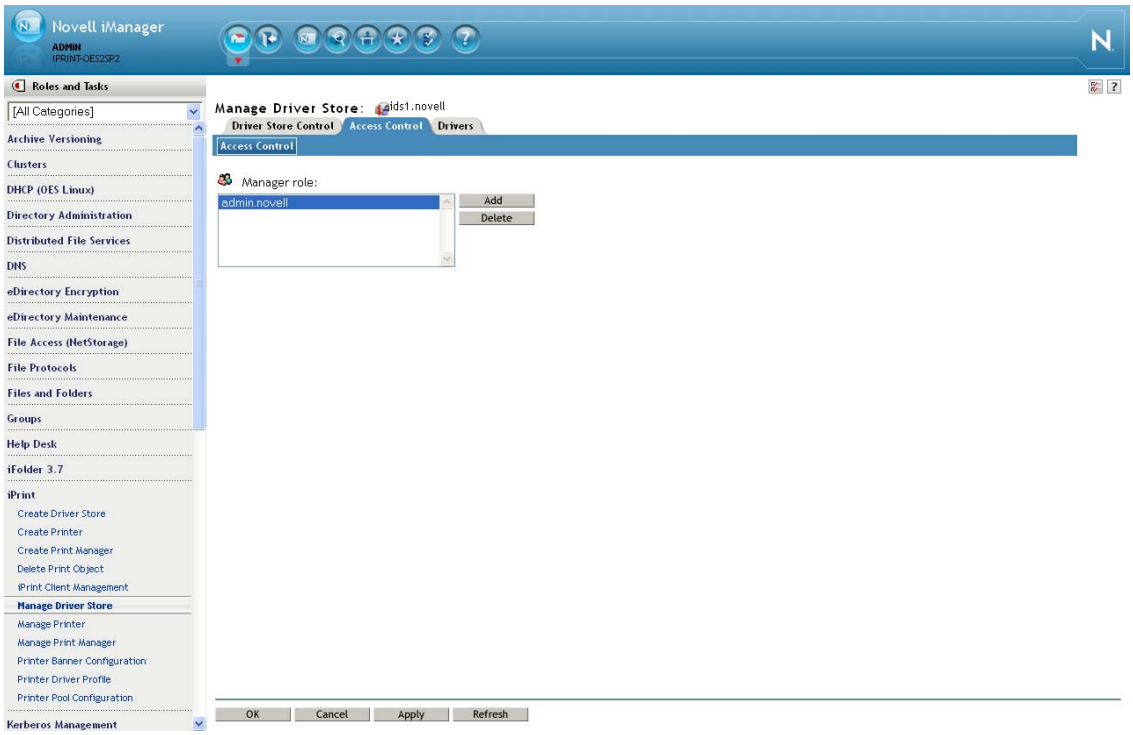
   Click **Cancel** to exit without saving your changes.
6. Click **Refresh** to refresh the screen and display the changes you just made.

Managing Driver Stores

To look at the information on the existing driver stores:

1. In iManager, click **iPrint** > **Manage Driver Store**.

2. Use the **Driver Store Control** tab to make changes in the driver functionality as needed:
   - Use the **Driver Store Control** panel to start up or shut down the driver store, copy the printer drivers in this driver store to another driver store, move the Driver Store configuration files and printer drivers to a different server, and view the status of the driver store (Active, Down, Initializing, or Shutting Down).
   - Use the **Identification** panel to view and add information related to the Driver Store, such as the Driver Store name, version, the network address where the Driver Store is running on, the list of iPrint Manager Customers using your Driver Store, the physical location of the server that the Driver Store is loaded on, and any extra information that you might want to note about your driver store.
3. Use the **Access Control** tab to view and modify the list of resources that have been the assigned manager roles for your driver store:
   - View the list of the existing Driver Store Manager role objects in the **Manager Role** panel.
   - Click **Add** to add a new Driver Store Manager object.
   - To delete a Driver Store Manager object, select an object from the **Manager Role** panel, then click **Delete**.



4 Use the **Drivers** tab to create and maintain Printer Drivers.

5 Click **OK** to save your changes.

or

Click **Cancel** to exit without saving your changes

6 Click **Refresh** to display the changes you just made.

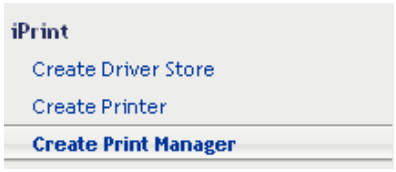
Creating a Print Manager

You need to create at least one Print Manager for your print system. Depending on your network setup, you can create additional Print Managers, such as, across a WAN link. The Print Manager must be running in order to create printers. For more information about placing print managers on your network, see "Creating Additional Print Managers" on page 119.

IMPORTANT: Based on the Print Manager configuration, the Print Manager creates a URL for each printer. When you create the Print Manager, you can specify a DNS name or an IP address for the iPrint Service of the same server where you are creating the Print Manager. You should use the DNS name because if the IP address changes, users must delete and reinstall the printers.

A Driver Store must exist before you can create a Print Manager. For more information, see "Creating a Driver Store" on page 28.

1 In iManager, click **iPrint** > **Create Print Manager**.



When you create the Print Manager the first time, you might receive an error about trusting a certificate. You need to click the **iPrint Certificate Manager** link and accept the certificate, then attempt to create the Print Manager again.

2 In the **Print Manager name** field, specify the name for your iPrint Manager object.

3 In the **Container name** field, specify the name of the container where you want the Print Manager object to reside.

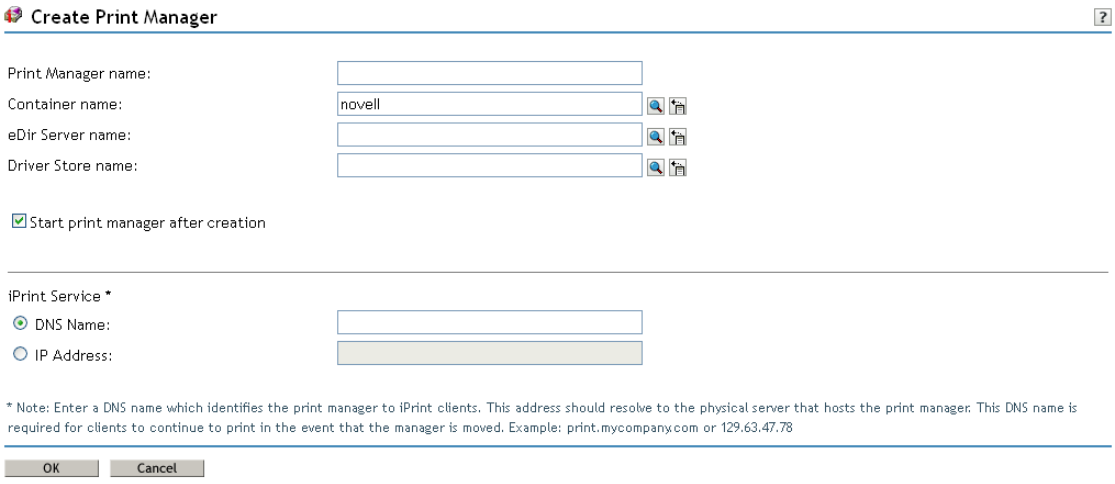
TIP: Use the Object Selector to choose the container object from an object list. For more information on using the Object Selector, see "Using the Object Selector" in the *NetIQ® iManager Administration Guide*. Use the History Browser to browse through the list of objects you used recently.

---

4 In the **eDir Server name** field, specify an eDirectory server with which you want the Driver Store to communicate.

For fault tolerance, you can specify more than one eDirectory server from the same tree. For more information, see "Changing the eDirectory Server Assignment" on page 29.

5 In the **Driver Store name** field, specify the Driver Store you want this Print Manager to use to deliver printer drivers to iPrint clients.


Create Print Manager
Print Manager name:
Container name:
novell
eDir Server name:
Driver Store name:
Start print manager after creation
iPrint Service *
DNS Name:
IP Address:
* Note: Enter a DNS name which identifies the print manager to iPrint clients. This address should resolve to the physical server that hosts the print manager. This DNS name is required for clients to continue to print in the event that the manager is moved. Example: print.mycompany.com or 129.63.47.78
OK
Cancel

6 Select the **Start print manager after creation** check box to automatically launch the Print Manager after creating it.

This option starts the iPrint Manager after the object is created and also starts the iPrint service after every server reboot.

If you do not select the **Start print manager after creation** check box, you should start the Print Manager manually after creating it. You do this by using **Manage Print Manager** > **Manager Control** in iManager or by entering `systemctl start novell-ipsmd.service` at a command prompt.

IMPORTANT: In a cluster setup, do not select the **Start print manager after creation** check box.

7 Use the **iPrint Service** panel to specify a DNS name (such as print.mycompany.com) to identify the iPrint service on the network.

This address should resolve to the physical server that hosts the Print Manager. Additionally, this address is used to create the iPrint printer's URL, which is installed on users' workstations during a printer installation.

If this URL changes, users must delete and reinstall their printers. The DNS name should not be the server's DNS name (such as server1.mycompany.com).

An IP address can be used if DNS is not configured for your network or if you use a secondary IP address. Using a primary IP address or the server's DNS name limits your ability to move the Print Manager. You should use DNS names, whenever possible, to avoid client issues, especially if you need to change the IP address in the future.

8 Click **OK** or Click **Cancel** to exit without saving any of your changes.

A CNAME is a DNS name that is tied to a Service and not tied to a Server Name. Novell recommends that you bind the Print Manager to a CNAME and not to a server DNS name or a server IP address. If the Print Manager is bound to a CNAME, the iPrint printers installed to workstations automatically point to the new server when you migrate iPrint services. There are two methods to view which address or name the Print Manager is bound to:

- Viewing the Installed Printer
- Using ipsmd.conf

Viewing the Installed Printer

Look at the name of an iPrint printer installed to a workstation. The name looks similar to one of the following formats:

printer1 on ipp://servicename.company.com

or

printer1 on <Name>

or

printer1 on ipp://servername.company.com

or

printer1 on ipp://<ipaddress>

The first format is the recommended format.

Using ipsmd.conf

View the PSMHostAddress value within the /etc/opt/novell/iprint/conf/ipsmd.conf file. The only recommended value is a CNAME, such as servicename.company.com.

To conform to the Novell CNAME recommendation:

IMPORTANT: Do not proceed with these steps if the Print Manager is bound to an IP address or a server DNS name.

1. Create a DNS entry for a Print Manager service name (CNAME) within the network's DNS configuration.

   The CNAME must resolve to the IP address of the server hosting the Print Manager. If the Print Manager is hosted on a cluster, the CNAME must resolve to the IP address of the cluster volume.
2. `/etc/hosts/` -Add the CNAME and server IP address to the server's `/etc/hosts` file.
3. `ipsmd.conf` - Modify the PSMHostAddress value within the `/etc/opt/novell/iprint/conf/ipsmd.conf` file from the server DNS or IP address to the Print Manager's CNAME.
4. Restart the Print Manager by using the `systemctl restart novell-ipsmd.service` command.

The iPrint clients detect the name change within the `ipsmd.conf` file, uninstall the iPrint printer, and re-install the iPrint printer to reflect the new name.

Creating a Printer

Before you can create a printer, you must first create a Print Manager on your server. See "Creating a Print Manager" on page 33 for more information. For information on the prerequisites for creating additional printers, see "Creating Additional Printers" on page 124.

1. In iManager, click **iPrint** > **Create Printer**.
2. Follow the prompts and fill in the fields.

   Click the help for explanations about the fields.
3. Click **Next**, then select the drivers for this printer.

   If the printer drivers for this printer are not listed, you can still create the printer. After the printer is created, add the printer drivers to the Driver Store and then associate the drivers to the printer by clicking **Manage Printer** > **Drivers**.
4. Click **Next** to create the printer.

Migrating to Novell iPrint

Depending on your current print system, you can upgrade to iPrint running on Linux by using one of the following methods:

- "Migrating iPrint from NetWare to OES" on page 36
- "Migrating an Existing NDPS Print System to iPrint on OES" on page 37

Migrating iPrint from NetWare to OES

See Chapter 6, "Migrating iPrint from NetWare 6.5 SP8 to OES 2018 SP3," on page 91 for more information.

Migrating an Existing NDPS Print System to iPrint on OES

To migrate your existing NDPS print system serviced by NetWare to an OES server, complete the following tasks:

1. Set up DNS for your existing system.

   For more information, see "Setting Up DNS for the Print Manager" in the *NW 6.5 SP8: iPrint Administration Guide*.

2. Upgrade your NDPS Print system to iPrint.

   For more information, see "Upgrading from NDPS to iPrint" in the *NW 6.5 SP8: iPrint Administration Guide*.

3. Distribute the iPrint Client.

   For more information, see "Windows: Distributing the iPrint Client" in the *NW 6.5 SP8: iPrint Administration Guide*.

4. Edit the UpgradeNDPSPrinters entry in `iprint.ini`.

   By default, the iprint.ini file is located at: /var/opt/novell/iprint/htdocs/iprint.ini. In case of NSS volumes for Cluster environments, the file is located at: /media/nss/NSSVOL1/var/opt/novell/iprint/htdocs/iprint.ini.

   For more information, see "Upgrading NDPS Printers to iPrint Printers" in the *NW 6.5 SP8: iPrint Administration Guide*.

5. Run the Server Consolidation Utility.

   For more information, see "Consolidating NDPS Printer Agents" in the *Novell Server Consolidation and Migration Toolkit Administration Guide*.

6. Reconfigure DNS to point to the new server.

Setting up iPrint on the NSS File System

It is now possible to host iPrint configuration and data on an NSS Volume. In a standard single server setup, you can continue to host iPrint on your default native Linux file system or you can host iPrint on the NSS file system.

In a cluster setup, we recommend making iPrint available in an OES NSS Cluster.

NOTE: When you create a volume, ensure that it has enough space to host all your driver needs.

Use `iprint_nss_relocate` script to host iprint on NSS file system in a standalone or cluster setup. This script performs the following actions:

- Moves iPrint configuration data to the NSS Volume.
- Creates symbolic links on the Linux POSIX file system that point to the location on NSS.
- Removes the `/etc/passwd` local iPrint user.
- Creates an iPrint LUM user and an iprintgrp LUM group.

  These users, along with Apache's www group and wwwrun user, are given rights to those sections of the NSS file system where the iPrint configuration and data are hosted.

Running the `iprint_nss_relocate` script

To run the `iprint_nss_relocate` script:

1. Go to the `/opt/novell/iprint/bin` folder on your OES server.
2. Run the following command at the prompt:

   ```
   ./iprint_nss_relocate -a <admin dn> -p <password> -n <NSS path> [-l cluster[-c] [-w]]
   ```

   For example:`./iprint_nss_relocate -a cn=admin,o=novell -n /media/nss/DATA -c o=Novell,t=iPrint_Tree -w o=Novell,t=iPrint_Tree -l cluster`

If you do not specify the password in the command, you are prompted to enter the password when the script runs. Refer to the following table for details on the options.

Option	Value
`-a`	Admin DN in LDAP format
`-p`	Password for the Admin user
`-n`	NSS Path with no trailing slash **IMPORTANT:** When you specify the path, ensure that there are no trailing slashes after the NSS path. For example: The path should be specified as `/media/nss/NSSVOl1` and not as `/media/nss/NSSVOL1/`.
`-l Cluster`	Use this parameter only when you want to achieve clustering on NSS file systems. For more details on clustering, see Chapter 9, “Configuring iPrint with OES Cluster Services,” on page 101. **IMPORTANT:** Use the `cluster` keyword with the `-l` option. Do not replace the cluster keyword with a cluster object name.
`-c (Optional)`	Specify the container FDN in LDAP format where the iPrint LUM object already exists or should be created. All the iPrint nodes on an NSS Cluster should share the iPrint LUM objects (iprint user and iprintgrp group) and should be in the same container. If the nodes are in different containers, you should specify the existing iPrint LUM objects' context on subsequent nodes where ipring_nss_relocate is running. To specify the context, give the -c option in the command. Do not choose the context where the non-user object named iPrint already exists.
`-w (Optional)`	Specify the container FDN in LDAP format where Apache LUM objects exist.

What's Next

To upgrade iPrint, see Chapter 4, "Upgrading to iPrint," on page 41.

To distribute the iPrint Client to your workstations and determine how users access the system.

- Chapter 5, "Installing and Setting Up iPrint on Client Workstations," on page 43: Helps you deploy the iPrint Client to workstations and explains the features of the iPrint Client.
- Chapter 8, "Customizing iPrint," on page 95: With your print system set up and the client distributed to the workstation, you can focus on how your users can access and install iPrint Printers.

4 Upgrading to iPrint

Use the following instructions to complete the upgrade of iPrint service:

1. Follow the step-by-step instructions for upgrading to OES 2018 SP3 server. For more information, see Upgrading to OES 2018 SP3 in the OES 2018 SP3: Installation Guide.
2. (Conditional) Follow the step-by-step instructions for upgrading cluster resources. For more information see Upgrading OES Clusters in the OES 2018 SP3: OES Cluster Services for Linux Administration Guide.
3. Start the Driver Store.

   ```
   systemctl start oes-idsd.service
   ```
4. Start Print Manager.

   ```
   systemctl start oes-ipsmd.service
   ```

   Now, the iPrint service is ready to use.
5. (Conditional) In a cluster setup, execute Step 3 to Step 4 on each node that hosts the iPrint service.

5 Installing and Setting Up iPrint on Client Workstations

For users to use iPrint, they need to install the Novell iPrint Client software and a printer. When a user selects a printer to be installed by iPrint, iPrint checks to see if the Novell iPrint Client software is installed and then installs it if necessary. If the iPrint Client software is already installed, the printer driver is downloaded and the printer is installed on the user's workstation.

- "Installing the iPrint Client" on page 43
- "Installing Printers" on page 52
- "Updating the iPrint Client" on page 62
- "Managing Print Jobs from the Client" on page 63
- "Windows Client: Using Additional Features" on page 63
- "Using iprntcmd on Linux and Macintosh" on page 76
- "Macintosh Client: Additional Features" on page 78
- "Using iPrint Client Management" on page 83
- "Uninstalling the Novell iPrint Client" on page 88
- "Printing from LPR Print Systems to iPrint" on page 89
- "What's Next" on page 89

Installing the iPrint Client

For iPrint to work properly, a workstation must have the iPrint Client installed. You can distribute the client to your workstations in a variety of ways, including the iPrint Printer List Web page, distribution software such as ZENworks, login scripts, and so on.

- "Linux: iPrint Client" on page 43
- "Macintosh: iPrint Client" on page 47
- "Windows: iPrint Client" on page 48

The client is located in the `/var/opt/novell/iprint/htdocs` directory.

Linux: iPrint Client

- "Linux: iPrint Client Requirements" on page 44
- "Linux: Controlling Access to the Workstation Print System" on page 44
- "Linux: Distributing the iPrint Client" on page 45

Linux: iPrint Client Requirements

In order for iPrint to work properly, workstations should have the following:

- ❒ SUSE Linux Enterprise Desktop (SLED) 10 SP2 (supports both 32-bit and 64-bit) or SLED10 SP3 (supports both 32-bit and 64-bit) or SLED 11 (supports both 32-bit and 64-bit).

  IMPORTANT: To install the client, you must have the `root` password or rights as `root`.

- ❒ A Mozilla-based browser (Firefox 2.x.x, 3.0, 4.0, or 5.0).

NOTE: If the iPrint server is busy when your installed printer attempts to communicate, CUPS (Common UNIX Printing System) moves the printer into an error state and holds all print jobs. CUPS plays a role similar to a Windows spooler. It is used for administering print services such as creating print queues and monitoring, deleting, and restarting print jobs. To release print jobs, use the printer management utility to restart the printer.

Linux: Controlling Access to the Workstation Print System

The Linux iPrint Client is packaged in two different, specialized installations that control access to the workstation's print system. The following table explains the differences between the two clients.

Table 5-1 *iPrint Client for Linux RPMs*

Client File Name	Workstation Access	Description
`novell-iprint-xclient-sh-`*`version`*`.i586.rpm`	Security high. Limited access to the print system.	This client requires workstation users to be defined with `lppasswd` to install, delete, or administer printers on the workstation. When performing one of these print operations, the user is prompted for a password.
`novell-iprint-xclient-sl-`*`version`*`.i586.rpm`	Security low. Unlimited access to the print system.	This client allows all users of the workstation to install, delete, or administer printers and print jobs on the workstation, including printers and print jobs of other users. By default, the iPrint Printer List Web page installs this RPM.

Using the items in the **iPrint Client for Linux RPM** list does not allow you to install the iPrint Client, nor does it play any role in determining the user's printing capabilities. These items provide you access to the workstation's print system.

IMPORTANT: To install the iPrint Client you need `root` permissions. To upload drivers from the system, you need to be defined with `lppasswd` or know the `root` password; otherwise, when you attempt to add drivers from the system, the driver list is blank. To define a user to be part of `lppasswd`, use the following command:

```
lppasswd -a linux_user_account -g sys
```

Printing to Secure Printers

When you are installing a secure iPrint printer, you might be prompted twice for your username and password. First, you are prompted to provide your network credentials to verify that you have access to the printer (it would be no use installing a printer that would not allow you to print). The second prompt is for CUPS, to ensure you have rights to install printers on the client machine. You need to provide the `root` password or be defined in the CUPS `lppasswd`.

Printing to secure printers is supported only when you are logged in to the desktop. If for any reason the CUPS iPrint back end cannot deliver the job to a secure printer, the job is requeued on the client with a hold. You can then see the held job and release it after you log in to the desktop.

NOTE: This client does not support printing from text logins such as SSH, unless the GUI is running on the host workstation.

Linux: Distributing the iPrint Client

Use one of the following methods to install the iPrint Client on users' workstations:

- "Installing the Client from the iPrint Printer List Web Page" on page 45
- "Delivering the Client through Distribution Software" on page 47

Installing the Client from the iPrint Printer List Web Page

You can download and install the iPrint Client from the iPrint Printer List Web page that resides on the server where the Print Manager is loaded. By default, the link is set to install the `novell-iprint-xclient-sl-version.i586` rpm high security client. You can change this by creating a symbolic link in `/var/opt/novell/iprint/htdocs` using the following command:`ln -sf` *`client`* `novell-iprint-xclient.i586.rpm` where *client* is the client filename noted above.

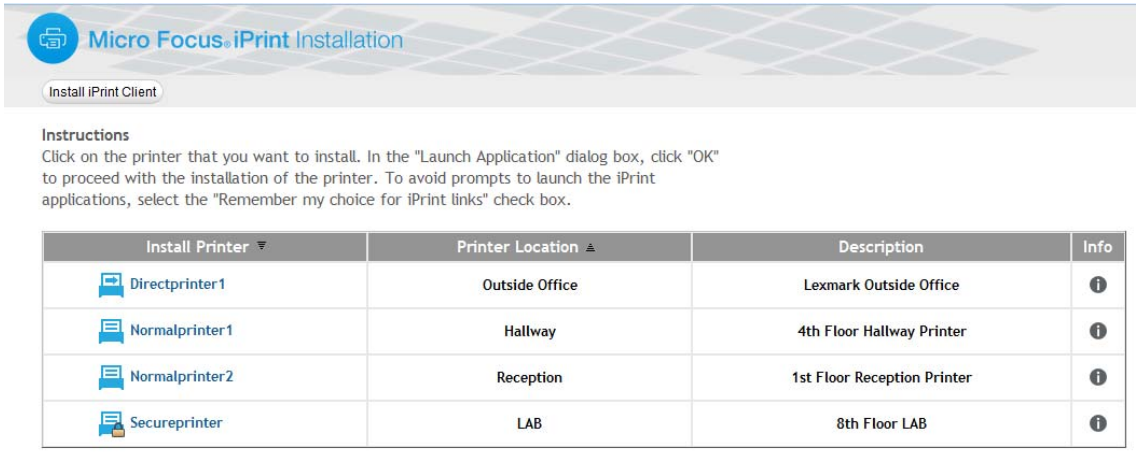
To user your web browser to install the iPrint client RPM package to your desktop or directory:

`http://`*`server_IP_ address_or_dns_name`*`/ipp`.

1. Specify the iPrint server URL in your web browser Address field:

   For example, if the DNS name for printing is printing.my_company.com, you would access iPrint from the following URL:

   http://printing.my_company.com/ipp


Micro Focus iPrint Installation
Install iPrint Client
Instructions
Click on the printer that you want to install. In the "Launch Application" dialog box, click "OK" to proceed with the installation of the printer. To avoid prompts to launch the iPrint applications, select the "Remember my choice for iPrint links" check box.
Install Printer
Printer Location
Description
Info
Directprinter1
Outside Office
Lexmark Outside Office
Normalprinter1
Hallway
4th Floor Hallway Printer
Normalprinter2
Reception
1st Floor Reception Printer
Secureprinter
LAB
8th Floor LAB

2 Click the printer you want to install.

   If the iPrint Client is not yet installed on your workstation, you are prompted to install it.

   NOTE: If you try to add a printer on a Mac client, the printer might get installed even if there are no Mac drivers associated with the printer. This is because the Mac client looks for an alternate associated Linux driver.

3 When you are prompted, save the iPrint Client RPM to your desktop or home directory.

4 Install the iPrint Client RPM by double-clicking the RPM. If a file association for the RPM does not exist, use an RPM-installer program.

5 Exit and restart your web browser before installing printers.

6 (Conditional) If you are using the KDE desktop and printing to secure printers, log in again as a user (not `root`) to start the iPrint listener, or run the `/opt/novell/iprint/bin/iprint-listener` command to manually load the listener:`/opt/novell/iprint/bin/iprint-listener`

   For GNOME users, you must load the iPrint listener manually or configure GNOME to load it. See “Additional Configuration for Secure Printers with GNOME” on page 47.

   NOTE: Run the iPrint Launcher from the applications menu if you want to install a secure printer without logging in again or without rebooting your system.

If you are using a non-standard installation of a browser, and the plug-in does not appear, use the `ln -s opt/novell/iprint/plugin/npnipp.so` command to create a symbolic link in the browser’s plug-in directory.

Delivering the Client through Distribution Software

You can use client distribution software such as ZENworks to deliver the iPrint Client and printers to your client workstations. For more information, see the documentation for your distribution software.

Additional Configuration for Secure Printers with GNOME

Users of the GNOME desktop that are printing to secure printers (printers that require you to authenticate) must add `iprint-listener` to the list of applications launched at login; otherwise, print jobs are not submitted to the secure printer.

NOTE: This does not apply to the KDE Desktop or GNOME running on the Novell Linux Desktop. This also does not apply when printing to non-secure printers.

---

1. On the GNOME desktop, click **System** > **Personal Settings**.
2. Under the System section, click **Sessions**.
3. Click **Startup Programs** > **Add**.
4. For the startup command, enter `/opt/novell/iprint/bin/iprint-listener`.
5. Click **OK** > **Close**.
6. Load `iprint-listener` by either running the command in Step 4 or by logging out and logging in again.

The next time you log in, `iprint-listener` is automatically loaded.

If `iprint-listener` is not running, jobs submitted to secure iPrint printers are held in the local client queue. To release the jobs, start `iprint-listener` and then resume the job on the printer.

Macintosh: iPrint Client

- "Macintosh: iPrint Client Requirements" on page 47
- "Macintosh: Distributing the iPrint Client" on page 48

Macintosh: iPrint Client Requirements

- ❒ For Mac OS 10.8 or later, the supported version is iPrint Client for Mac 6.0 and later.
- ❒ For Mac OS 10.7, the supported version is iPrint Client for Mac 5.8.
- ❒ For Mac OS 10.6 or earlier, the supported version is iPrint Client for Mac 5.6.
- ❒ Compatible web browser. See "iPrint Client Supported Browsers" on page 157 for more information.

NOTE: If the iPrint server is busy when your installed printer attempts to communicate, CUPS moves the printer into an error state and holds all print jobs. To release print jobs, use the printer management utility to restart the printer.

Macintosh: Distributing the iPrint Client

Use one of the following methods to install the iPrint Client on users' workstations:

- "Installing the Client from iPrint Printer List Web Page" on page 48
- "Delivering the Client through Distribution Software" on page 48

Installing the Client from iPrint Printer List Web Page

You can download and install the iPrint Client from the iPrint Printer List Web page that resides on the server where the Print Manager is loaded.

1. Specify the iPrint server URL in your web browser address field:

   `http://server_IP_ address_or_dns_name/ipp`.

   For example, if the DNS name for printing is printing.my_company.com, you would access iPrint from the following URL:

   http://printing.my_company.com/ipp

   The disk image file is downloaded, the install package extracted, and the disk image file is moved to the Trash. Then the iPrint Client install is launched.

2. Click the printer you want to install:

   2a. If the iPrint Client is not yet installed on your workstation, follow the prompts to install the client.

   The disk image file is downloaded, the install package extracted, and the disk image file is moved to the trash. Then the iPrint Client install is launched.

   2b. After installing the client, restart your web browser for the browser to recognize the iPrint Client plug-in.

3. After installing the client, restart your web browser for the browser to recognize the iPrint Client plug-in.

PostScript Printer Description (PPD) files that use Foomatic filters should be running the latest Foomatic filter script and ESP Ghostscript, which are available from Linux Printing.org (http://www.linuxprinting.org/macosx/hpijs).

Delivering the Client through Distribution Software

You can use client distribution software such as ZENworks to deliver the iPrint Client and printers to your client workstations. For more information, see the documentation for your distribution software.

Windows: iPrint Client

- "Windows: iPrint Client 6.x Requirements" on page 49
- "Windows: Printer Driver Profile Requirements" on page 49
- "Windows: iPrint Client Support Matrix" on page 49
- "Windows: iPrint Client Installation and Uninstallation Files" on page 49
- "iPrint Client Files Location" on page 51
- "Windows: Distributing the iPrint Client" on page 51

Windows: iPrint Client 6.x Requirements

- ❒ Windows Server 2019 (64-bit), Windows Server 2016 (64-bit), Windows 10 (32/64-bit), Windows 8.1 (32/64-bit), Windows 8 (32/64-bit).

  Any user can install the iPrint Client on a Windows 8.1/8/10/Windows Server 2016/Windows Server 2019, your web browser must be running as Administrator on Vista to install printers and upload drivers, unless the iPrint URL is part of the Trusted site list. Refer to the `-w` or `--trustedwebsiteforInternetExplorer` option in Table 5-6 on page 70 for details.

  NOTE: DOTNET 4.7.2 or later must already be installed on the Windows OS

- ❒ Web browser with JavaScript enabled, such as Microsoft Internet Explorer 7 or later.
- ❒ Ensure that you apply the following hotfixes from Microsoft if your Vista has not been upgraded to SP3 or later:
  - 941542 (http://support.microsoft.com/en-us/kb/941542/en-us)
  - 932206 (http://support.microsoft.com/kb/932206/en-us)

  Contact Microsoft Customer Support Services for more information.

Windows: Printer Driver Profile Requirements

- Windows Server 2019 (64-bit)
- Windows Server 2016 (64-bit)
- Windows 10 (32/64-bit)
- Windows 8.1 (32/64-bit)
- Windows 8 (32/64-bit)

Windows: iPrint Client Support Matrix

Table 5-2 *Windows iPrint Client Support Matrix*

Client Version	Windows Vista/2008	Windows 7	Windows 8	Windows 8.1	Windows 10
5.74 - 5.82	Yes	Yes	No	No	No
5.86 - 5.92	Yes	Yes	Yes	No	No
5.94 - 6.0.1	Yes	Yes	Yes	Yes	No
6.02 - 6.11	Yes	Yes	Yes	Yes	Yes

Windows: iPrint Client Installation and Uninstallation Files

The Windows iPrint Client is packaged in several different, specialized installations. Depending on your distribution method or need, select the file you want. The following table compares the different types of installations.

Table 5-3 *iPrint Clients for Windows*

iPrint Client Filename	Description
`nipp.exe`	Installs the iPrint Client and displays dialog boxes and progress windows that require user intervention. This is the default installation program.
`nipp.zip`	A WinZip version of the client that can be used with distribution software programs. After the file is unzipped, run `setupipp.exe`. For a list of the command line parameters that you can use with `setupipp.exe`, enter `setupipp.exe /h` at a command prompt. For more information on `setupipp` options, refer to the Table 5-4 on page 50.
`nipp-s.exe`	Installs the iPrint Client. A screen displays the progress of the installation, but requires no user intervention. **NOTE:** Because Windows 95/98 users must reboot their workstations after the client is installed, you should use nipp-sr.exe unless you are using a software distribution package that reboots the workstation.
`nipp-su.exe`	Uninstalls the iPrint Client. A screen displays the progress of the uninstall, but requires no user intervention.

Table 5-4 *setupipp Options*

Options	Description
/S	Silently installs or uninstalls the client.
/R	Restarts the workstation when the installer uninstall is completed.
/U	Uninstalls the client from your workstation.
/?	Displays the help.
/L	Uninstalls in a LDAP-compliant environment (only unique usernames).

Deprecated iPrint Client Files

Starting with iPrint Client 6.0.0 for Windows, the following iPrint Client files have been deprecated:

Table 5-5 *Deprecated iPrint Client Files for Windows*

iPrint Client Filename	Description
`nipp-sr.exe`	Installs the iPrint Client and reboots the workstation. A screen displays the progress of the installation, but no user intervention required.
`nipp-u.exe`	Uninstalls the iPrint Client. The user confirms the uninstallation, then a screen displays the progress of the uninstallation.
`nipp-sl.exe`	Provides a ready-to-use executable package with the /L and /S setup options loaded automatically.

NOTE: Even though these files are deprecated from iPrint Client 6.0.0 for Windows and later, you can perform all the functionalities associated with them using the iPrint Client File `nipp.zip`.

iPrint Client Files Location

Starting with iPrint Client 6.0.0 for Windows, `C:\Program Files\Novell\iPrint` is the default location where the iPrint Client files are installed.

Third-party applications that require leveraging iPrint binaries can use the following registry key to get the install location:

Registry Key: `HKEY_LOCAL_MACHINE\SOFTWARE\Novell-iPrint\ [szInstallDir]`

Windows: Distributing the iPrint Client

Use one of the following methods to install the iPrint Client on users' workstations:

- "Installing the iPrint Client from the iPrint Printer List Web Page" on page 51
- "Delivering the Client through Distribution Software" on page 52

Installing the iPrint Client from the iPrint Printer List Web Page

You can download and install the iPrint Client from the iPrint Printer List Web page on the server where the Print Manager is loaded.

1. To reach the iPrint Printer List Web page, enter the following URL in your web browser address field: `http://server_IP_ address_or_dns_name/ipp`.

   For example, if the DNS name for printing is printing.my_company.com, you would access iPrint from the following URL:

   http://printing.my_company.com/ipp

2. Click the printer you want to install.

   If the iPrint Client is not yet installed on your workstation, you are prompted to install it.

3. When you are prompted, save the iPrint Client RPM to your desktop or home directory.
4. Install the iPrint Client RPM by double-clicking the RPM.

Delivering the Client through Distribution Software

You can use client distribution software such as ZENworks to deliver the iPrint Client and printers to your client workstations. For more information, see the documentation for your distribution software.

For example, when using Novell ZENworks, you can use any of the iPrint Clients described in "Windows: iPrint Client Installation and Uninstallation Files" on page 49 to deliver the Windows iPrint Client. You need to use the `nipp.zip` file to deliver the client to the desktop and execute `setupipp.exe` with one of the command line parameters.

Installing Printers

You can install and distribute iPrint printers in the following ways:

- "Using the iPrint Printer List Web Page on Windows" on page 52
- "Using the iPrint Printer List Web Page on Macintosh" on page 55
- "Creating Location-Based Printing Web Pages" on page 61
- "Uninstalling iPrint Printers" on page 62

Using the iPrint Printer List Web Page on Windows

iPrint generates a list of printers associated with a Print Manager that can be used to install the iPrint Client, install an iPrint printer, or check the status and configuration of a printer and a list of print jobs.

You can install the iPrint printers using the following browsers:

- "On Microsoft Internet Explorer" on page 52
- "On Mozilla Firefox" on page 53
- "On Google Chrome" on page 54

If the iPrint Client is not installed, install it when you are prompted.

On Microsoft Internet Explorer

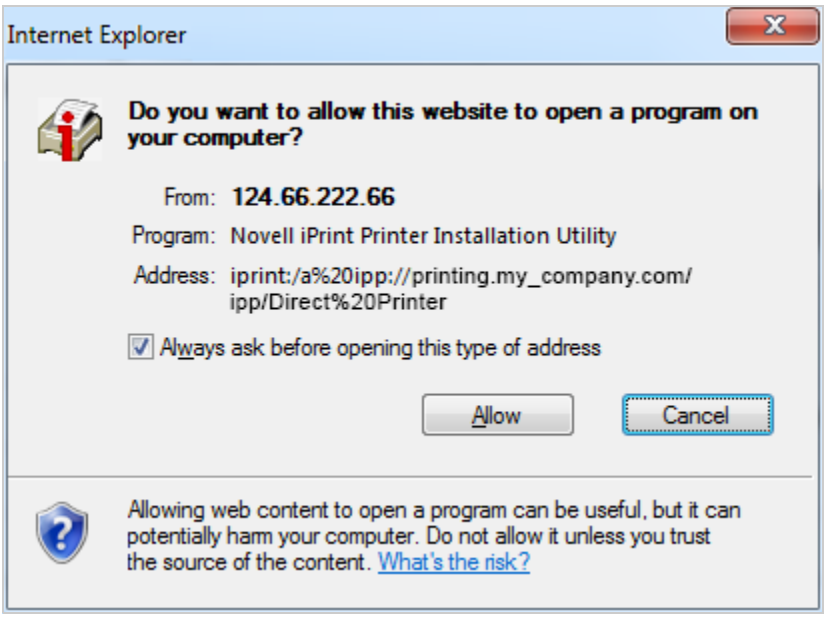
1. Launch the browser, and either the DNS name or the IP address to access the iPrint Printer List web page.

   For example, http://*server_IP_ address_or_dns_name*/ipp.

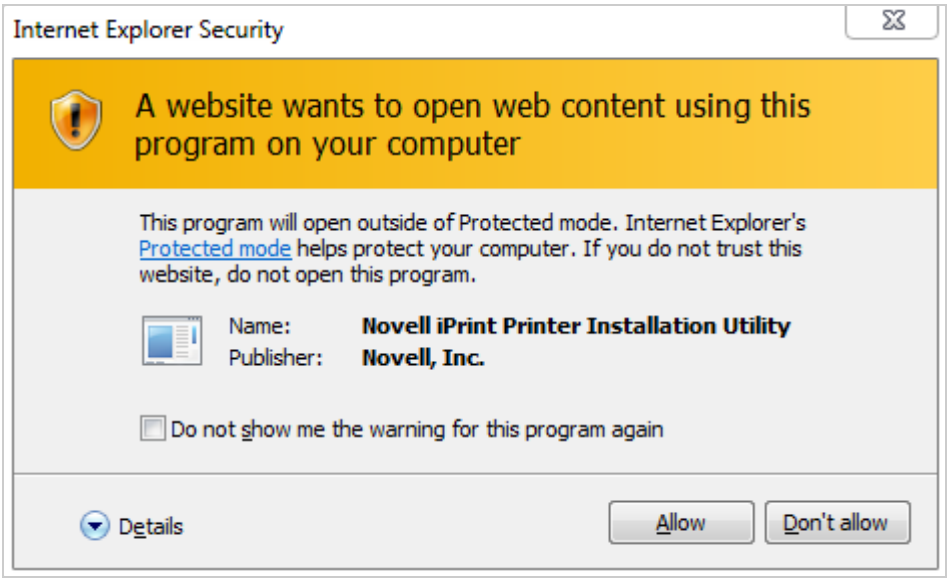
   All the available printers are listed on the iPrint Printer List web page.

2. Click on the printer that you want to install.

   On some versions of Internet Explorer, if you are prompted with an Internet Explorer warning message **do you want to allow this website to open a program on your computer?** message, click **Allow**.


Internet Explorer
Do you want to allow this website to open a program on your computer?
From: 124.66.222.66
Program: Novell iPrint Printer Installation Utility
Address: iprint:/a%20ipp://printing.my_company.com/ipp/Direct%20Printer
Always ask before opening this type of address
Allow
Cancel
Allowing web content to open a program can be useful, but it can potentially harm your computer. Do not allow it unless you trust the source of the content. What's the risk?

The Internet Explorer Security warning message dialog box is displayed.


Internet Explorer Security
A website wants to open web content using this program on your computer
This program will open outside of Protected mode. Internet Explorer's Protected mode helps protect your computer. If you do not trust this website, do not open this program.
Name: Novell iPrint Printer Installation Utility
Publisher: Novell, Inc.
Do not show me the warning for this program again
Details
Allow
Don't allow

3 Click **Allow** on the **Internet Explorer Security** warning message dialog box to proceed with the installation of the printer.

4 (Optional) To avoid future prompts to launch the iPrint applications, select the **Do not show me the warning for this program again** check box.

On Mozilla Firefox

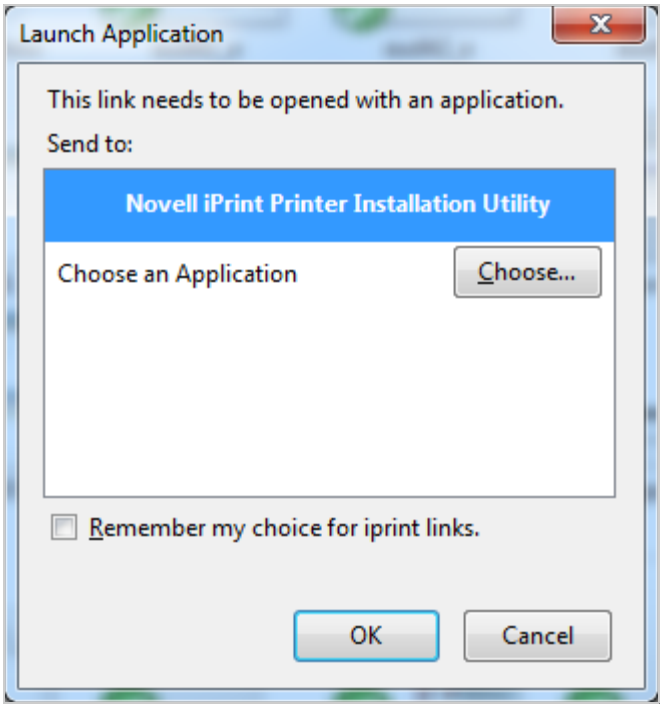
1 Launch the browser, and either the DNS name or the IP address to access the iPrint Printer List page.

For example, http://*server_IP_ address_or_dns_name*/ipp.

All the available printers are listed on the iPrint Printer List web page.

2 Click on the printer that you want to install.

The Launch Application dialog box is displayed.



3 Select **Micro Focus iPrint Printer Installation Utility** in the **Launch Application** dialog box, then click **OK** to proceed with the installation of the printer.

4 (Optional) To avoid future prompts to launch the iPrint applications, select **Remember my choice for iPrint links** check box.

On Google Chrome

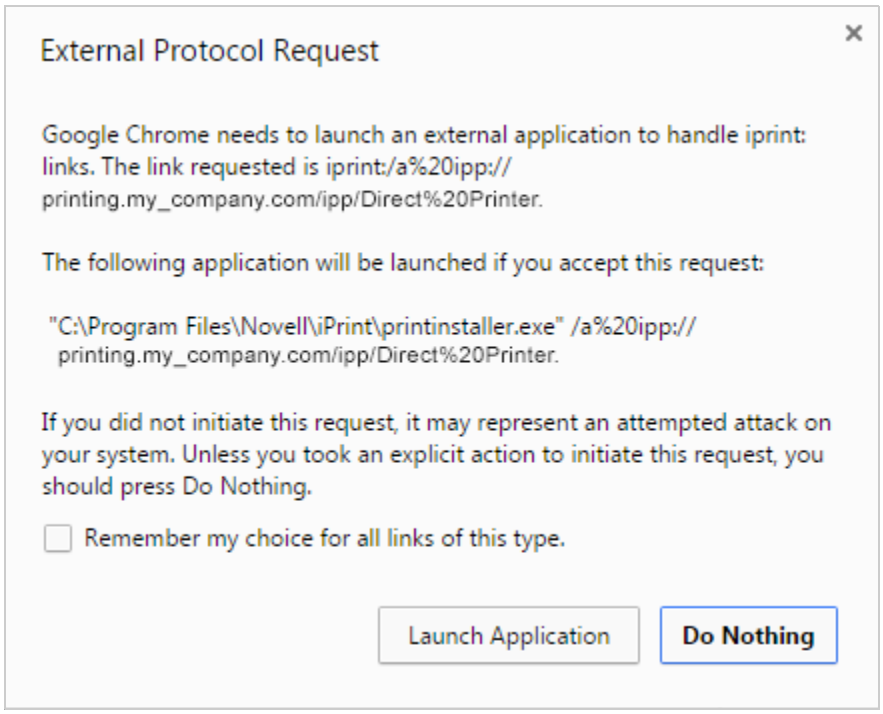
1 Launch the browser, and either the DNS name or the IP address to access the iPrint Printer List page.

For example, http://*server_IP_ address_or_dns_name*/ipp.

All the available printers are listed on the iPrint Printer List web page.

2 Click on the printer that you want to install.

The External Protocol Request dialog box is displayed.


External Protocol Request
Google Chrome needs to launch an external application to handle iprint: links. The link requested is iprint:/a%20ipp://printing.my_company.com/ipp/Direct%20Printer.
The following application will be launched if you accept this request:
"C:\Program Files\Novell\iPrint\printinstaller.exe" /a%20ipp://printing.my_company.com/ipp/Direct%20Printer.
If you did not initiate this request, it may represent an attempted attack on your system. Unless you took an explicit action to initiate this request, you should press Do Nothing.
Remember my choice for all links of this type.
Launch Application
Do Nothing

3 Click **Launch Application** on the **External Protocol Request** dialog box to proceed with the installation of the printer.

4 (Optional) To avoid future prompts to launch external protocol links, select the **Remember my choice for all links of this type** check box.

If the iPrint Client is not installed, install it when you are prompted.

During the printer installation, iPrint downloads and installs the printer driver, if one is associated with the printer, and installs the printer on the user's workstation. The first time a printer is installed, printer drivers are forced to the workstation, even if the workstation contains a newer driver. Print Managers refresh their saved copies of printer drivers for the printers they are hosting with updated printer drivers from the associated Driver Store.

Using the iPrint Printer List Web Page on Macintosh

iPrint generates a list of printers associated with a Print Manager that can be used to install the iPrint Client, install an iPrint printer, or check the status and configuration of a printer and a list of print jobs.

You can install the iPrint printers using the following browsers:

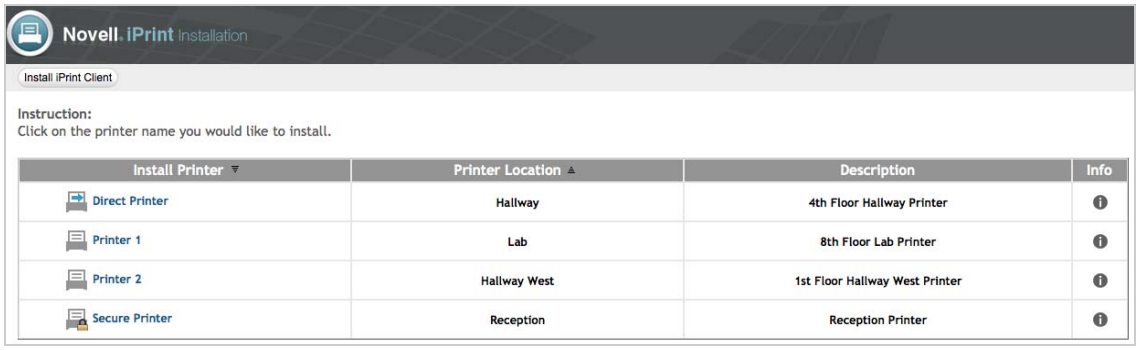
- "On Safari" on page 55
- "On Mozilla Firefox" on page 57
- "On Google Chrome" on page 59

On Safari

1 Launch the browser, and use either the DNS name or the IP address to access the iPrint Printer List page.

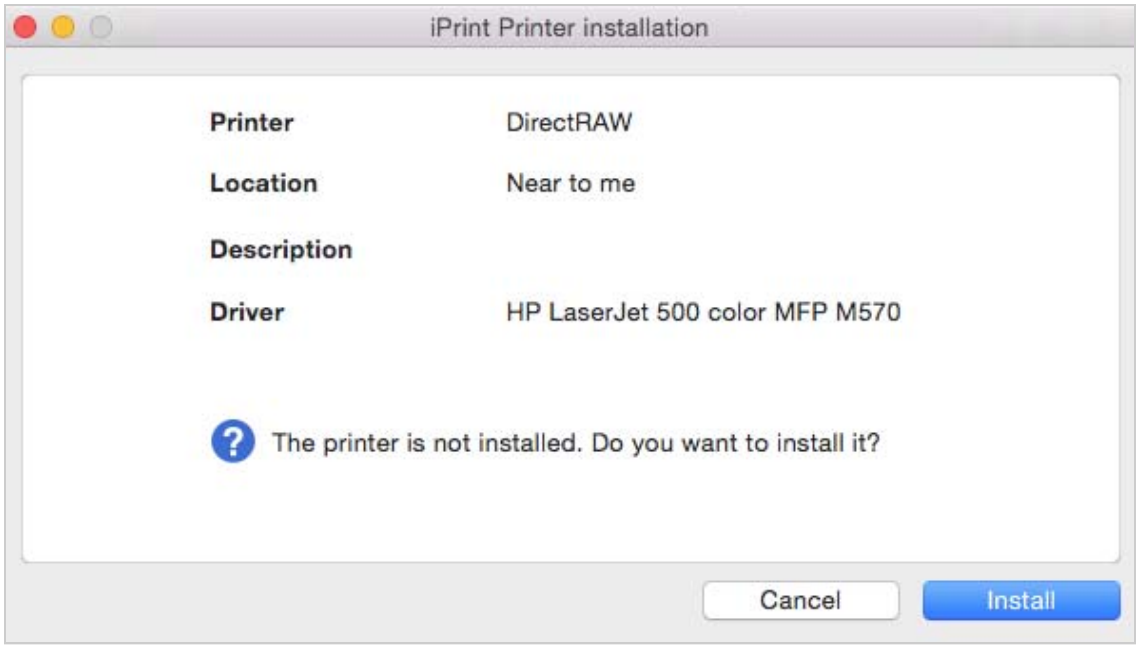
For example, http://*server_IP_ address_or_dns_name*/ipp.

All the available printers are listed on the iPrint Printer List web page.



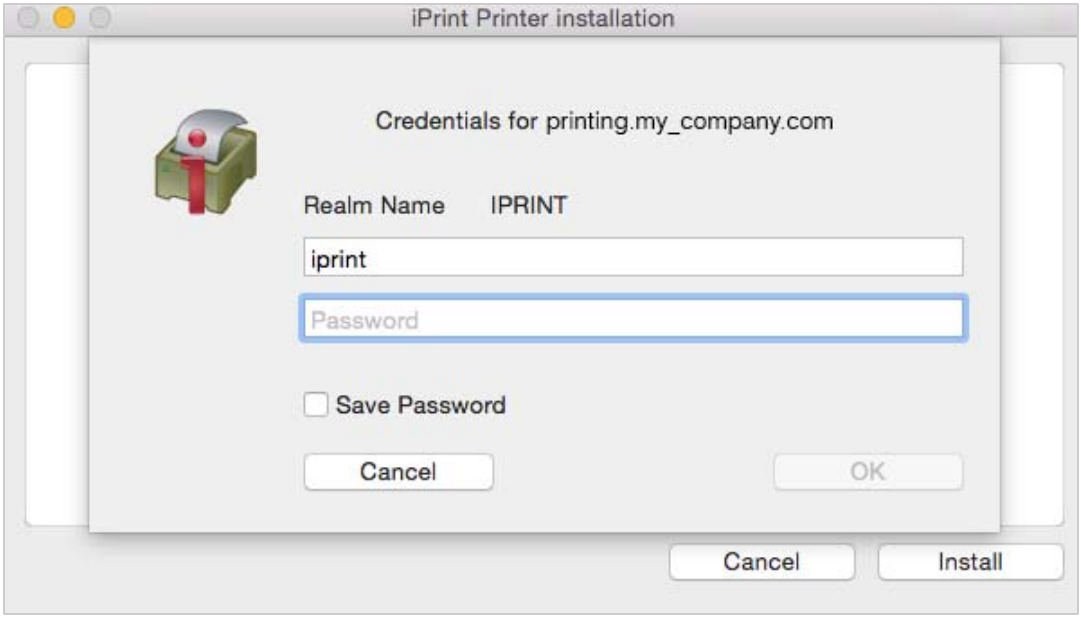
2 Click on the printer that you want to install.

The iPrint Printer Installation dialog box is displayed.



3 Click **Install** to proceed with the installation of the printer.

3a If you are installing a secure printer, the iPrint Printer Installation dialog box is displayed once again prompting for your user credentials.



3b Specify your user credentials.

3c (Optional) To avoid future prompts, select **Save Password** check box.

3d Click **OK** after you have specified your credentials.

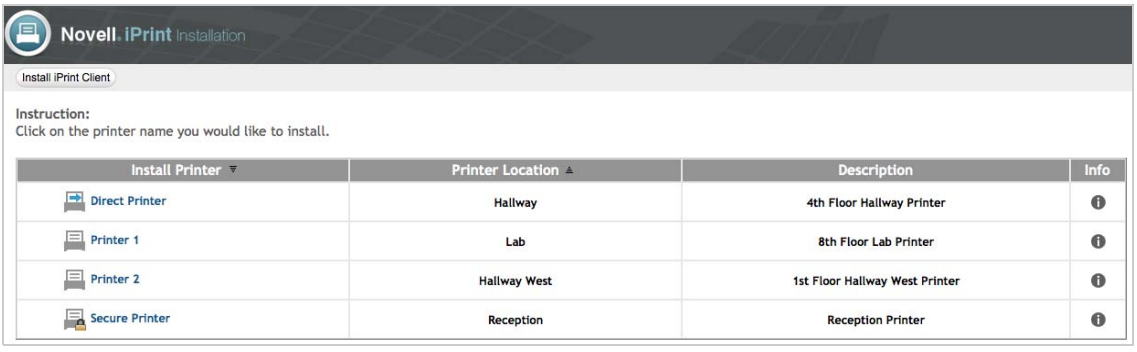
4 Click **OK** when the printer installation is complete.

On Mozilla Firefox

1 Launch the browser, and use either the DNS name or the IP address to access the iPrint Printer List page.

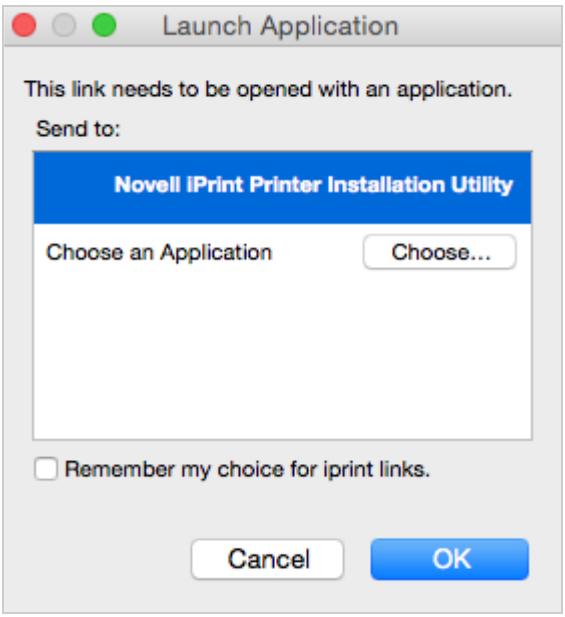
For example, http://*server_IP_ address_or_dns_name*/ipp.

All the available printers are listed on the iPrint Printer List web page.



2 Click on the printer that you want to install.

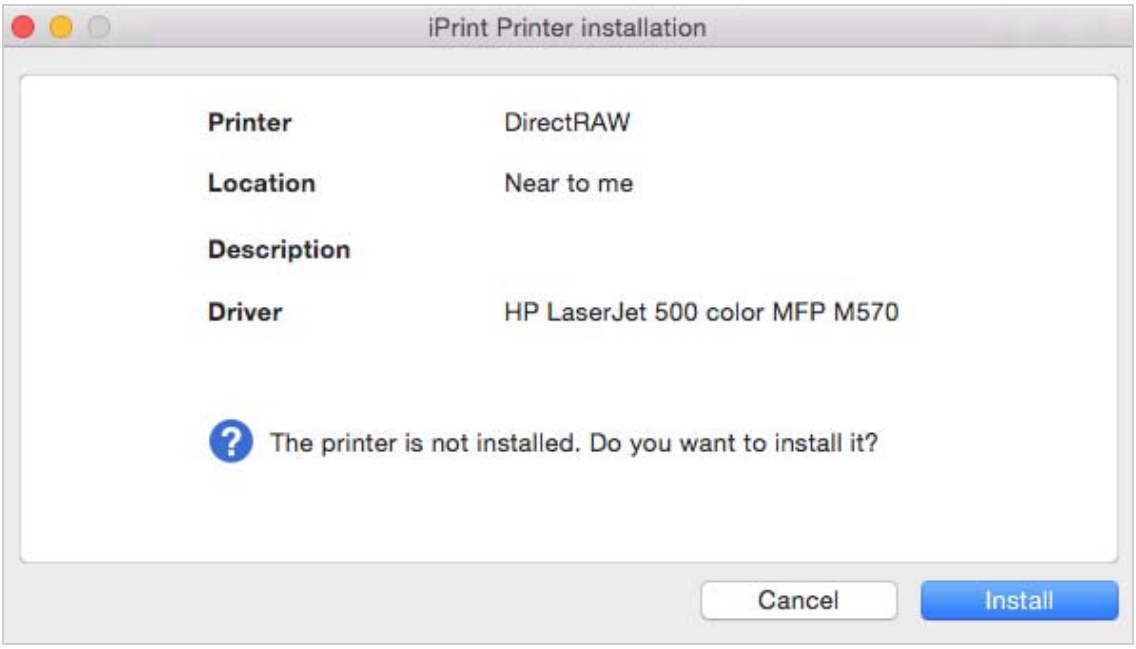
The Launch Application dialog box is displayed.



3 Select **Micro Focus iPrint Printer Installation Utility** in the **Launch Application** dialog box, then click **OK** to proceed with the installation of the printer.

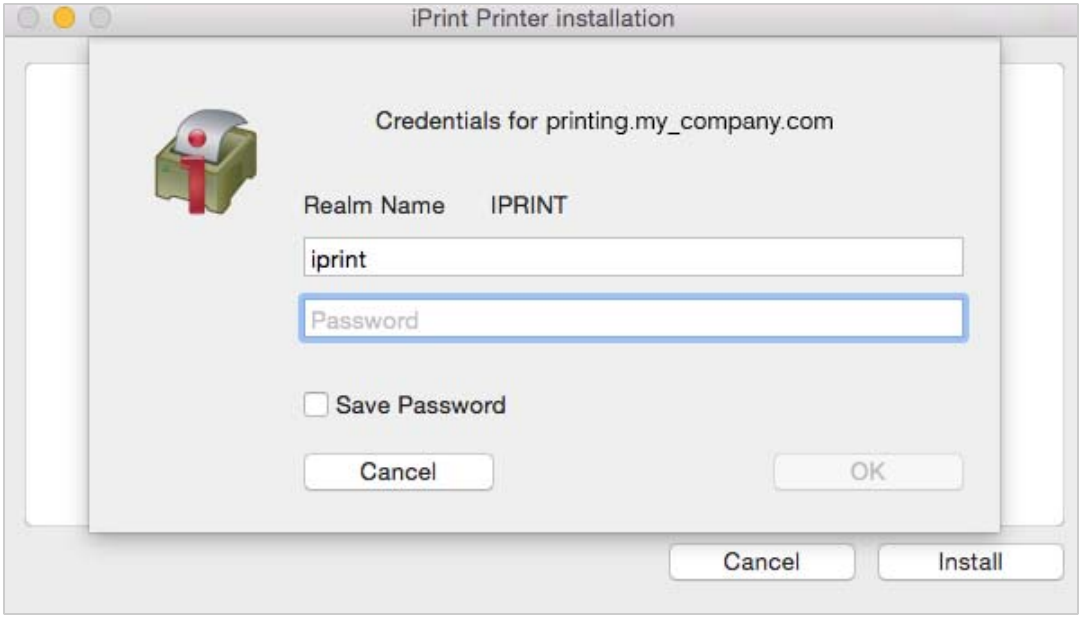
4 (Optional) To avoid future prompts to launch the iPrint applications, select **Remember my choice for iPrint links** check box.

The iPrint Printer Installation dialog box is displayed.



5 Click **Install** to proceed with the installation of the printer.

5a If you are installing a secure printer, the iPrint Printer Installation dialog box is displayed.



5b Specify your user credentials.

5c (Optional) To avoid future prompts, select **Save Password** check box.

5d Click **OK** after you have specified your user credentials, then click **OK** to proceed with the installation of the printer.

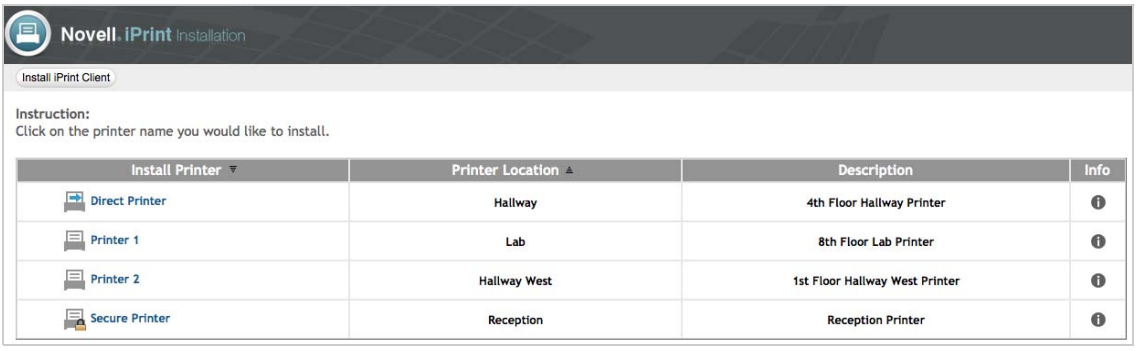
6 Click **OK** when the printer installation is complete.

On Google Chrome

1 Launch the browser, and use either the DNS name or the IP address to access the iPrint Printer List page.

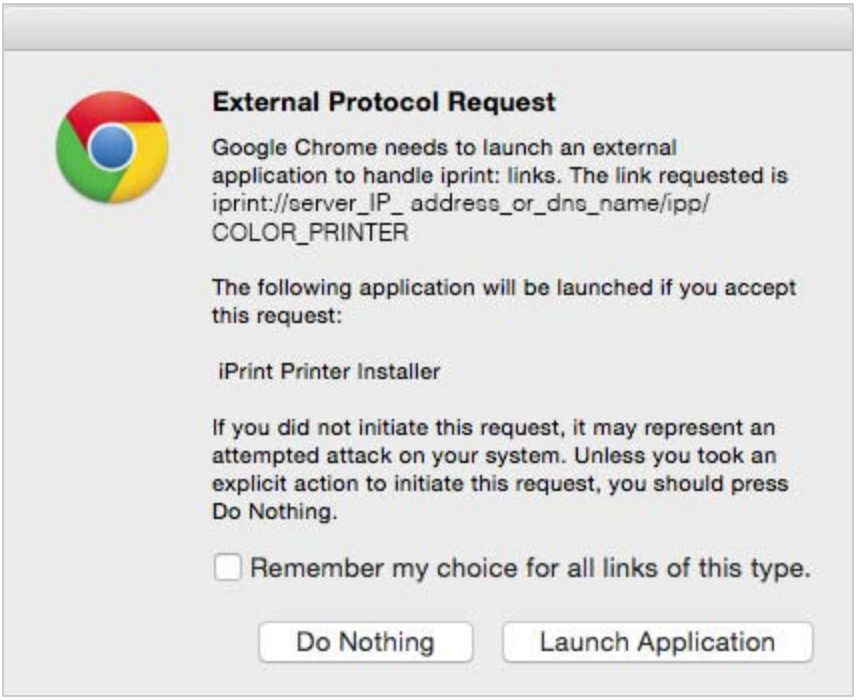
For example, http://*server_IP_ address_or_dns_name*/ipp.

All the available printers are listed on the iPrint Printer List web page.



2 Click on the printer that you want to install.

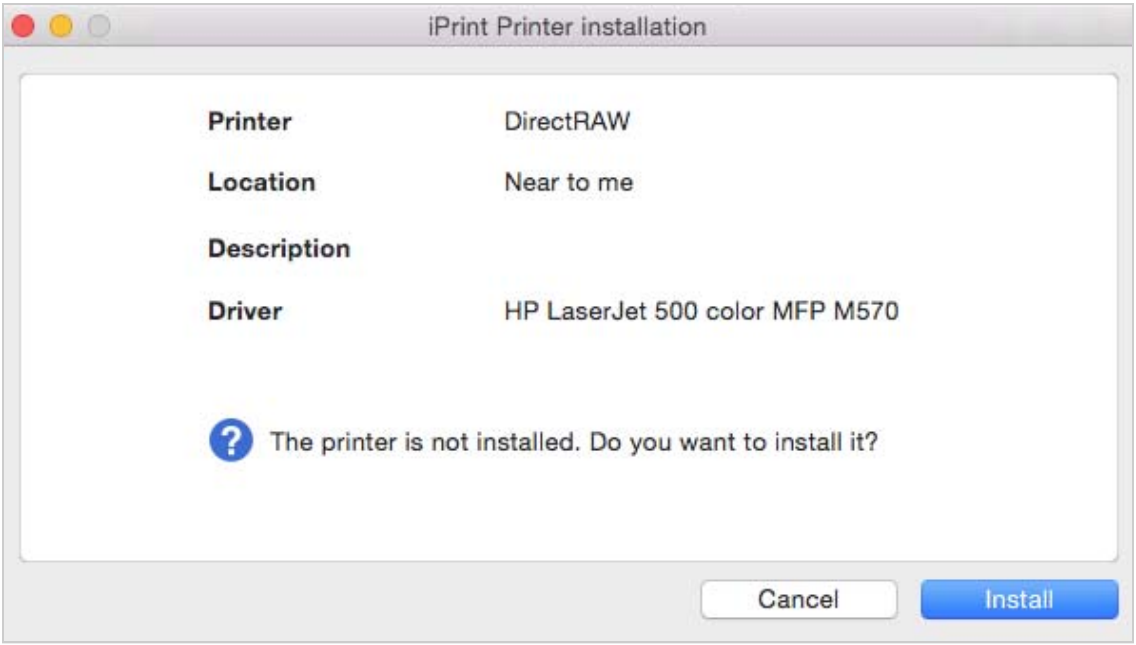
The External Protocol Request dialog box is displayed.


External Protocol Request
Google Chrome needs to launch an external application to handle iprint: links. The link requested is iprint://server_IP_ address_or_dns_name/ipp/COLOR_PRINTER
The following application will be launched if you accept this request:
iPrint Printer Installer
If you did not initiate this request, it may represent an attempted attack on your system. Unless you took an explicit action to initiate this request, you should press Do Nothing.
Remember my choice for all links of this type.
Do Nothing
Launch Application

3 Click **Launch Application** on the **External Protocol Request** dialog box to proceed with the installation of the printer.

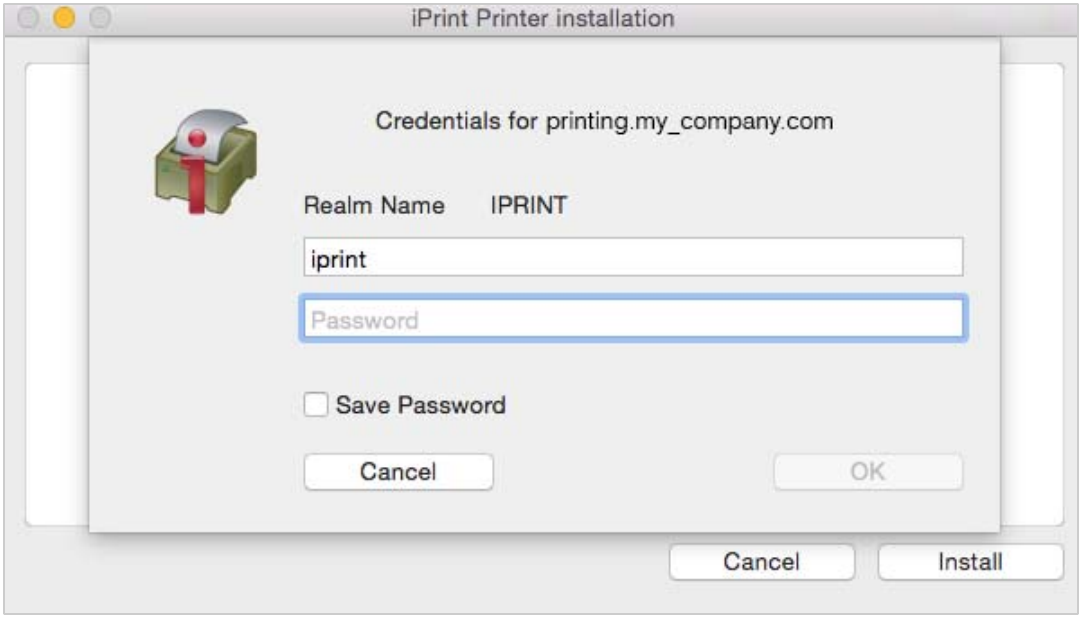
4 (Optional) To avoid future prompts to launch external protocol links, select the **Remember my choice for all links of this type** check box.

The iPrint Printer Installation dialog box is displayed.



5 Click **Install** to proceed with the installation of the printer.

5a If you are installing a secure printer, the iPrint Printer Installation dialog box is displayed.



5b Specify your user credentials.

5c (Optional) To avoid future prompts, select **Save Password** check box.

5d Click **OK** after you have specified your user credentials, then click **OK** to proceed with the installation of the printer.

If the iPrint Client is not installed, install it when you are prompted.

During the printer installation, iPrint downloads and installs the printer driver, if one is associated with the printer, and installs the printer on the user's workstation. The first time a printer is installed, printer drivers are forced to the workstation, even if the workstation contains a newer driver. Print Managers refresh their saved copies of printer drivers for the printers they are hosting with updated printer drivers from the associated Driver Store.

Creating Location-Based Printing Web Pages

Location-based printing lets users select printers based on locations by using a list view or a map. Using a list view, printer locations can be displayed on HTML pages organized by building, office location, eDirectory context, and so forth. You configure the lists in a way that best suits the users' needs. For an example of using a list view, see `/var/opt/novell/iprint/htdocs/examples/example1/innerweb.html`.

For more information, see "Creating Customized Printer Lists" on page 97.

You use the iPrint Map Designer to create maps of printer locations through drag-and-drop feature. After the maps are created, they can be posted on a Web server for users to access. When users view the maps, they can find a printer close to their location and then click its icon. If they are not yet installed, the client software and the printer are installed on the user's workstation. For an example of using a list view, see `/var/opt/novell/iprint/htdocs/examples/example1/innerweb.html`.

For more information on using the iPrint Map Designer, see "Creating Location-Based Maps with iPrint Map Designer" on page 95.

NOTE: The iPrint map pages now display browser-specific user instructions during printer installation. If you have upgraded to iPrint Client 6.0.0 or later (for Windows), it is recommended that you recreate your map pages.

Uninstalling iPrint Printers

Use any of the following methods to uninstall iPrint printers based on your operating system:

Linux

- Use the CUPS management utility included with your Linux distribution
- Use the iPrint icon.
  1. Right-click the **iPrint** icon, then click **Printers**.
  2. Select the printer that you want to uninstall.
  3. Click *Uninstall* to uninstall the printer.

     Hold down the Shift key to select more than one printer, or click *Uninstall All* to uninstall all the printers.

Macintosh

- Use the print list management utility included with the operating system.
- Use the iPrint icon.
  1. Right-click or Control-click the **iPrint** icon, then click **Printers**.
  2. Select the printer that you want to uninstall.
  3. Click *Uninstall* to uninstall the printer.

     Hold down the Shift key to select more than one printer, or click *Uninstall All* to uninstall all the printers.

Windows

Use the printer folder to delete printers installed on your system.

For more information on uninstalling the Novell iPrint Client, see "Uninstalling the Novell iPrint Client" on page 88.

Updating the iPrint Client

Periodically, users need updates to the Novell iPrint Client. You need to decide how to manage this. If you want iPrint to automatically update the clients, see "Automatically Updating the iPrint Client" on page 72, or you can choose to distribute a newer client through a software distribution package that uses and application such as Novell ZENworks.

You are allowed five times to reject the iPrint Client update. After that the iPrint Client update is forced.

NOTE: If you install a printer, and an administrator has updated the iPrint Client to version 5.40 then created a profile and associated the profile with a printer, you see an error indicating The `parameter is incorrect` if you attempt to install the same printer and you have an earlier version of iPrint on your workstation.. You can ignore this message. For more information, see the error code "87" on page 196.

Managing Print Jobs from the Client

Users can monitor and manage their own print jobs from their workstations.

Linux: To manage print jobs or delete printers, use the CUPS management utility included with your Linux distribution. To monitor the status of the last 10 print jobs, right-click the **iPrint** icon in the notification area and select **Job Status**.

Macintosh: To manage print jobs or delete printers, use the print list management utility included with the operating system. To monitor the status of the last 10 print jobs, right-click or control-click the **iPrint** icon in the notification area, and select **Job Status**.

Windows: To manage print jobs or delete printers, use the Windows Printers folder on the **Start** menu or in the Control Panel. To monitor the status of the last 10 print jobs, right-click the **iPrint** icon in the notification area and select **Document Status**.

Windows Client: Using Additional Features

- "Windows: Context Menu-based Desktop Printing" on page 63
- "Automatically Removing a Printer from the Client Workstation" on page 66
- "Auto Redirection of Printer" on page 66
- "Auto Driver/Profile Update" on page 66
- "Updating the iPrint Client" on page 66
- "Using the iPrint Client Icon" on page 66
- "Configuring the iPrint Client Settings" on page 67
- "Implementing iPrint by Using the Command Line" on page 69
- "Managing Global Actions through Iprint.ini" on page 72

Windows: Context Menu-based Desktop Printing

Provides an option to print from the Windows context menu.

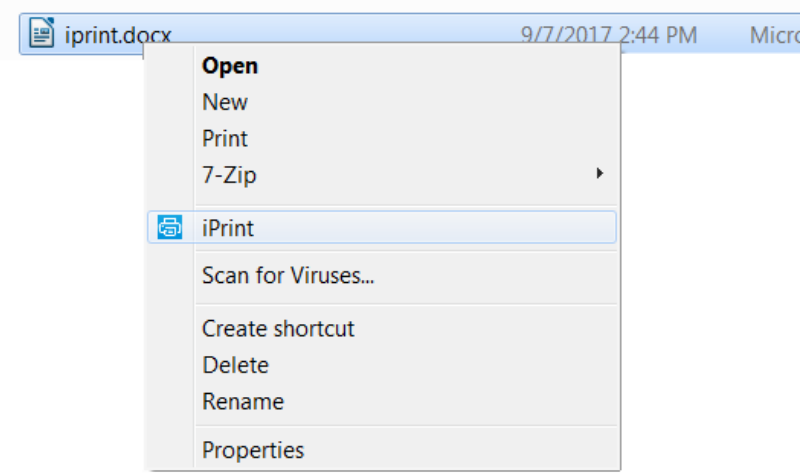
Prerequisites

iPrint Advanced must be installed. For more information, see OES 2018 SP3: iPrint for OES Administration Guide.

iPrint is now available as a context menu option on Windows. To print from the context menu, do the following:

1 Right-click on a file or files, then select iPrint, an iPrint dialog is displayed.

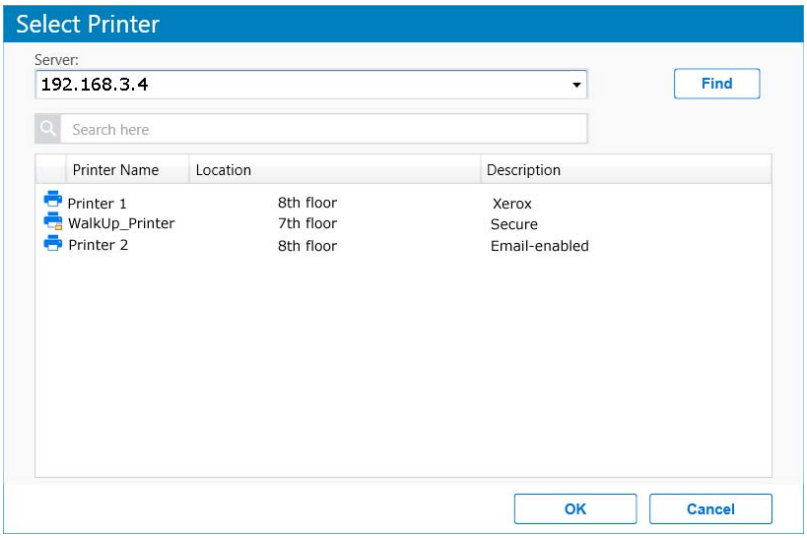
You can print without opening the document. For example, if you received a document in an email, and no application is available to view it, you can still print with the context menu option.



2 Click **Select a printer**.

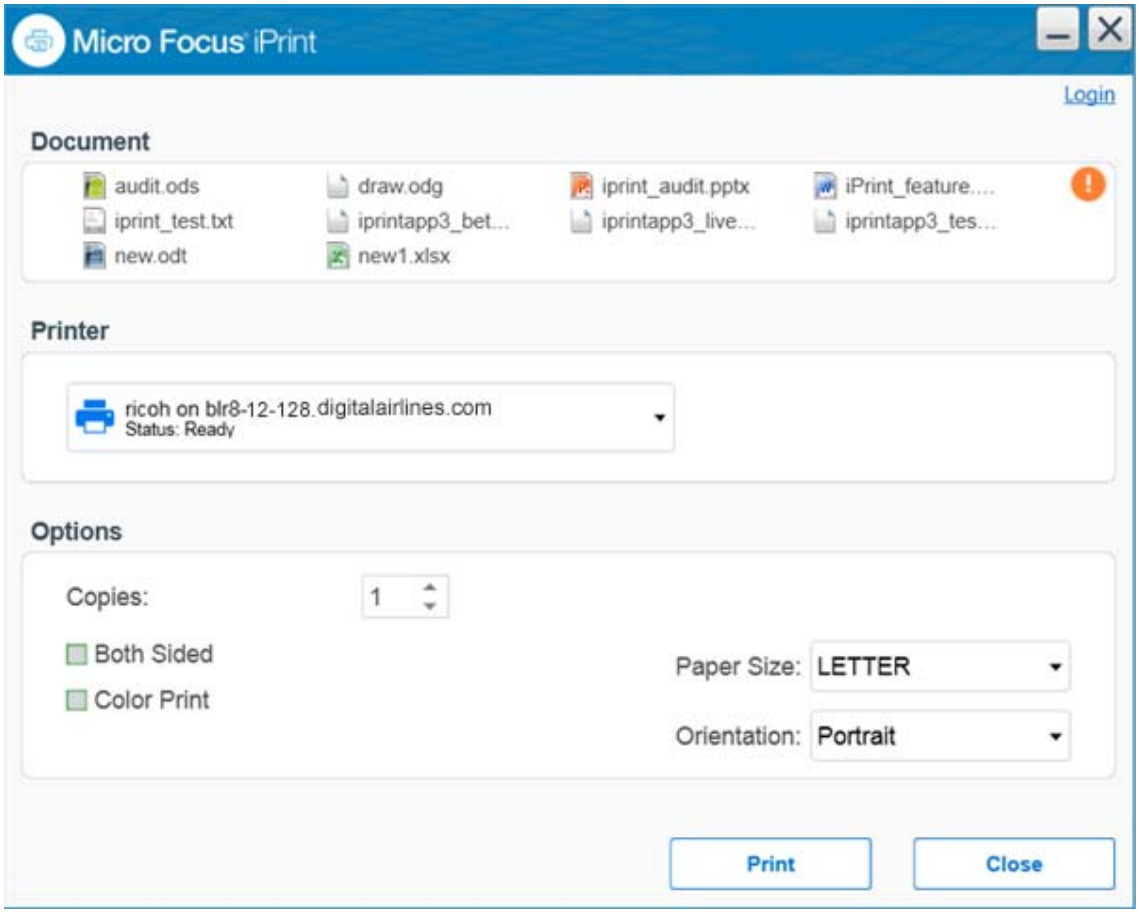
2a The recently used printers are populated in the drop-down menu of **Printer**. Select a previously used printer or Click **Choose printer** to select a different printer.

2b Specify the IP address or hostname of the iPrint for OES server and click **Find**.



For secure or a WalkUp printer, you must login to the server. On logging in, printers are displayed through ACLs set for that user. For username, you can login using either the CN of the username or in a LDAP format (comma separated).

3 Click **Print**. The documents are successfully printed.



NOTE: If some file formats are not supported for printing, the file will not be listed for printing.

The info icon lists the unsupported files.

To see the list of supported file formats, see TID 7022058.

Automatically Removing a Printer from the Client Workstation

You can automatically remove the printer from the client workstation if the printer is removed from the server. The client displays a pop-up when the printer is removed from the client.

Auto Redirection of Printer

You can automatically redirect the printer from the client if the printer redirection is set up in the server. The older printer is removed and the new printer is installed on the client.

The client displays a pop-up informing you that your currently installed printer will be automatically uninstalled and a new printer will be installed in its place.

Auto Driver/Profile Update

You can automatically update the client with the latest drivers available on the server, so users do not need to manually update. If you make any changes to the driver in the driver store, the client displays a pop-up describing the changes and the printer is updated with the new driver.

You can enable this option using iManager. For more information on, see “Auto Driver/Profile Update” on page 121.

Updating the iPrint Client

Periodically, users need updates to the Novell iPrint Client. You need to decide how to manage this. You can allow iPrint to automatically update the clients or you can choose to distribute a newer client through a software distribution package that uses and application like Novell’s ZENworks.

See “Automatically Updating the iPrint Client” on page 72 for more information.

Using the iPrint Client Icon

On Windows workstations, the iPrint Client adds an icon to the notification area. The iPrint icon lets you receive notification when a job has printed and lets you quickly access iPrint Client settings. Right-clicking the icon displays the following menu options:

iPrint Settings: Opens the iPrint Client Settings page.

Document Status: Lets you check the status and other information for the last 10 documents printed.

Refresh iCM: Displays the iCM configuration settings. If the administrator has modified the iCM settings, then clicking this button immediately applies the setting for the user.

Launch Printer Folder: Opens the Windows printer folder.

Find/Install Printers: (Optional) Opens a browser window to the Menu Link URL specified on the **Tray Icon** tab.

Close: Removes the iPrint icon from the notification area until the next reboot. To make the icon reappear in your notification area, click **Start** > **Programs** > **Novell iPrint** > **iPrint Client Settings** > **Tray Icon** and deselect the **Enable the iPrint icon in the system tray**. Click **OK**. Then repeat the process to enable the icon.

To permanently remove the icon, see "Managing iPrint's Tray Icon" on page 68.

Configuring the iPrint Client Settings

- "Using a Proxy Server" on page 67
- "Managing Passwords for Remote iPrint Servers" on page 68
- "Managing iPrint's Tray Icon" on page 68
- "Managing Print Job Notifications" on page 68
- "Setting Up iPrint on Terminal Servers" on page 68
- "Configuring the iPrint Client to work in a Windows / Active Directory Environments without Client for Open Enterprise Server" on page 69

Using a Proxy Server

A proxy server is located between a client and another server that the client is trying to communicate with. Often proxy servers are used in conjunction with a firewall to keep internal addresses private while exposing only the proxy server's address to external users. If you have users that need to submit print jobs through a proxy server, you can use the iPrint Clients Proxy setting. The Client sends all print-related requests, such as a print job, to the proxy server. The proxy server then redirects the print job to the correct iPrint server.

For example, Juan is a laptop user who has installed and printed to a variety of iPrint printers at the company's headquarters. While on the road, Juan wants to submit a report to his manager. Rather than sending the report by e-mail or fax, Juan decides to send it to the printer near his manager's office. When Juan tries to send the report to the printer, he receives an error that the printer cannot be found. He knows that the company uses a firewall and a proxy server. He types the proxy server address in the iPrint Proxy settings, then tries to print the report again. This time the print job is accepted. The print job travels from his laptop to the proxy server. The proxy server redirects the print job to the printer's Print Manager, where the print job is spooled and forwarded to the printer.

To set the proxy server address for iPrint in iManager:

1. Click **Start** > **Programs** > **Novell iPrint** > **iPrint Client Settings** > **Proxy**.
2. To use a proxy server, select the check box, then specify the URL for the proxy server.

   To disable using a proxy server, deselect the check box.
3. Click **OK**.

Managing Passwords for Remote iPrint Servers

You can manage passwords for print services that you indicated should be remembered by your workstation. The ability to delete passwords is useful if you are connected to a print service that you no longer use.

To manage passwords for print services in iManager:

1. Click **Start** > **Programs** > **Novell iPrint** > **iPrint Client Settings** > **Passwords**.
2. Select the password you want to remove, then click **Clear Password**.

Managing iPrint's Tray Icon

The iPrint icon in the notification area lets you receive notification when a job has printed, and lets you view a list of print jobs that you have submitted.

1. Click **Start** > **Programs** > **Novell iPrint** > **iPrint Client Settings** > **Tray Icon**.
2. Modify the settings.

For more information about the settings, see "Using the iPrint Client Icon" on page 66.

Managing Print Job Notifications

iPrint can notify you through a pop-up message in the notification area when your document has printed or needs attention.

To turn iPrint notification on or off:

1. Click **Start** > **Programs** > **Novell iPrint** > **iPrint Client Settings** > **Notifications**.
2. Select or deselect the check box as necessary.

NOTE: If you close the iPrint applet running in the notification area, you do not receive notifications. To restart the applet, see Using the iPrint Client Tray Icon.

Setting Up iPrint on Terminal Servers

You can set up iPrint on a terminal server to allow terminal server clients to install the iPrint Client and print to iPrint printers.

- "Installing the iPrint Client on a Terminal Server" on page 68
- "Configuring iPrint for Terminal Server Clients" on page 69

Installing the iPrint Client on a Terminal Server

1. Log in to the terminal server with Administrator or equivalent rights.
2. Install the iPrint Client.

   You can download the iPrint Client from the iPrint Printer List or you can copy and execute `nipp.exe` from the iPrint server in `sys:\apache2\htdocs\ippdocs`.

NOTE: On terminal servers, the client auto-update does not work. To update the client with a newer release, you must install it manually.

Configuring iPrint for Terminal Server Clients

You can configure iPrint to work in any of the following ways, depending on the rights the terminal server client has.

- **Install user printers only:** User printers can only be installed and deleted by the user who installed the printer. User printers are not available to other users on the workstation.
- **Install workstation printers only:** Workstation printers can be installed and deleted only by users with sufficient rights. After a workstation printer is installed, all users using the workstation can print to it.
- **Try to install workstation printer first:** If the user has insufficient rights to install the printer, the printer is installed as a user printer.

To configure iPrint for terminal server clients:

1. Log in to the terminal server with Administrator or equivalent rights.
2. Click **Start** > **Programs** > **Novell iPrint** > **iPrint Client Settings**.
3. Click **Terminal Server**, then select the configuration option you want.
4. Click **OK**.

Configuring the iPrint Client to work in a Windows / Active Directory Environments without Client for Open Enterprise Server

This functionality has been added to help you use iPrint on Windows platforms even if you do not have Client for Open Enterprise Server installed. You use the iPrint Client Management utility to work without the Client for Open Enterprise Server and to share your Windows/AD login credentials with the iPrint Client. You can configure the iPrint Client Management (iCM) PSM address by using the iPrint Client tray icon. To view the iPrint Client tray icon's **iCM** tab, enter `iprntcfg icm` at the command line. Then, enter the PSM address (IP/DNS) in the iPrint Client tray icon's **iCM** tab and the system will use the DSServer (Directory Service Server) configuration of the PSM server to obtain the details of your iCM profile. If the PSMServer is not set, you can still specify the DSServer by populating the registry entry directly.

You can also set the address of the PSM server by using the `iprntcmd -S <IP/DNS>` command, in combination with a remote-policy pushing engine like ZENworks.

Implementing iPrint by Using the Command Line

`Iprntcmd.exe` is a DOS command line utility that lets you install iPrint printers without a web browser and capture LPT ports to iPrint printers. This command is useful when you have legacy applications that require output to an LPT port or when you want to add printers through a login script.

Using iprntcmd.exe to Install iPrint Printers

If you need to install an iPrint printer but cannot use a web browser, you can use the `iprntcmd.exe` command at a DOS prompt. The `iprntcmd.exe` command can install, remove, or set a printer as the default printer.

Use the following parameters when executing the `iprntcmd` command.

Table 5-6 *Parameters Used with* `iprntcmd`

Parameters	Description
-a | --addprinter *options printer_uri*	Installs the specified printer. You can replace *options* with any or all of the following: ◆ no-gui: Does not display the printer installation dialog box when installing a printer. ◆ default: Installs the specified printer as the default printer. ◆ temp: The installed printer is removed when the workstation is rebooted. **NOTE:** These options are available only in the Windows Client.
-c	Clears the password from the cache.
-d | --delprinter *printer_uri*	Removes the specified printer.
-f | --fetchdriverlocal *printer_uri*	Pulls drivers from the server and stores them in the local cache directory, such as the `c:\ndsp\drvr_cache directory`.
-g | --getdefault	Displays the default printer installed on the workstation.
-h | --help	Displays help for the command.
-i | --info *printer_uri*	Displays the printer information.
-j | --listjobs *printer_uri*	Lists the print jobs for the specified printer that are on the server in a pending or printing state.
-l | --listlocalprinters	Lists printers installed on the workstation.
-L | --listprintersonserver *psm-hostname or psm-address*	Lists iPrint printers on the specified Print Manager where *psm-hostname* or *psm-address* can be a DNS name or IP address.

Parameters	Description
-p | --printfile *printer-uri file path*	Sends a printer-ready file to the specified iPrint printer. This option is used to test the print path (job flow) from the client workstation to the server and subsequently to the printer. This requires a print-ready file as an input. The printer or the driver does not need to be installed on the client workstation.
-P | --ppdlist	Lists the PPDs installed on this workstation.
-s | --setdefault *printer_uri*	Sets the specified printer as the default.
-S | --setprimarypsm *psm-hostname or psm-address*	Sets the PSM address for iCM configuration.
-t | --testpage *printer_uri*	Prints a test page to the specified printer.
-v | --version *server_uri server_user*	Displays the server platform and version information, where *server_uri* is the URI for the server and *server_user* is a valid user for the server.
-U | --uploaddriver <*ids-address*> or <*ids-hostname*> <*username*> <*password*> [INF-Filepath <*model-name*>]	Uploads printer drivers. **IMPORTANT:** INF-Filepath and model-name are mandatory only for Windows XP platforms.
`-w | --trustedwebsiteforInternetExplorer` *printer_installation_page_uri*	Adds the specified URI of the printer installation page to the trusted site list for Internet Explorer. The trusted site list allows users to view and add the printers directly from the printer IPP site or printer map page, without running the Internet Explorer browser with administrator privileges on Windows Vista. For example, *http://printing.my_company.com/ipp*.

Use quotes around printer-uri if it contains spaces.

Syntax

`iprntcmd` *`parameters`*

Example

To install a printer named ColorPrinter1 and set it as the default printer, you would enter the following command:

```
iprntcmd -a -s ipp://printing.my_company.com/ipp/ColorPrinter1
```

Managing Global Actions through Iprint.ini

A configuration file named `iprint.ini` is located on each server where a Print Manager is running. The `iprint.ini` file should be synchronized across all servers where iPrint and a Print Manager are running. The `iprint.ini` file is located in `/var/opt/novell/iprint/htdocs/`.

The file controls the following tasks:

- "Automatically Updating the iPrint Client" on page 72
- "Creating a Short Printer Name Profile" on page 72
- "User Printers" on page 73

IMPORTANT: When you apply a support pack, the existing `iprint.ini` file is saved as `iprint.bak` and a new `iprint.ini` is added. If you made changes to the `iprint.ini` file, you must delete the new `iprint.ini` file from the support pack and rename `iprint.bak` to `iprint.ini`. If you want the new functionality that is included with the latest `iprint.ini`, you should re-create the settings in `iprint.bak` in the new `iprint.ini`.

Automatically Updating the iPrint Client

When a workstation boots up, iPrint checks the default printer to ensure that the workstation is using the latest Novell iPrint Client. If necessary, a newer client is installed. You can use a configuration file to control how this update takes place.

An `iprint.ini` configuration file is located on each server where iPrint is installed. This file controls whether the user is prompted before the updated client is installed or the updated client is installed without user intervention. When the client is installed without user intervention, the user still sees the installation program.

1. Using a text editor, edit the `iprint.ini` configuration file.

   The `iprint.ini` file is located in `var/opt/novell/iprint/htdocs/`
2. Change the AllowAutoUpdate setting for the desired behavior.
3. Save the file.

IMPORTANT: The `iprint.ini` file should be synchronized across all servers where iPrint and an Print Manager are running.

Creating a Short Printer Name Profile

By default, the installed printer name on the client follows the full UNC/URL format: \\ipp://*dns_name**printer_name*. For example, \\ipp://Printing.My_Company.Com\ColorPrinter. These printer names are often too long to fit in an application's display field for the printer name. You can use a Short Printer Name Profile to replace the UNC server name (or *dns_name*) for all printers on a Print Manager with any name you want to display. For example, if you want to display just the company name, you could use \\My_Company\ColorPrinter.

NOTE: You should keep the UNC path and printer name to fewer than 32 characters.

The Short Printer Name Profile is available only on Windows Vista and later workstations. When you implement a Short Printer Name Profile, printers that are already installed are not affected. Only newly installed printers after the change use the shortened name. For printers already installed, you must delete and reinstall the printers to implement any changes to their names.

1. Edit `iprint.ini` in a text editor.

   The `iprint.ini` file is located in `var/opt/novell/iprint/htdocs/`

2. Change the value of the ShortInstallName parameter to the value you want displayed.

   `ShortInstallName=`*`your_name`*

   Replace *your_name* with the value you want displayed. To reset the parameter to its default setting, use `default` as the value.

   Use only lower ASCII characters and do not use a slash, quote, space, or comma.

3. Save the file.

IMPORTANT: The `iprint.ini` file should be synchronized across all servers where iPrint and a Print Manager are running. The Installed Printer Name Profile affects all printers on a Print Manager.

User Printers

A printer can be installed as a workstation printer or a user printer. The User Printer feature takes advantage of the Microsoft Access Control List ability to restrict users ability to view the printer. Only the user which installed the printer can install, see, use, and delete the printer. Hence, it is the User's Printer, and not the Workstation's Printer. User printers are not available to other users on the workstation.

- "Enabling User Printers" on page 73
- "Deleting User Printers" on page 74

Enabling User Printers

To enable user printers, edit the `iprint.ini` file and change the value for `AllowUserPrinters = value` to one of the following:

Table 5-7 *User Printer Settings*

Value	Description
0	Follow Windows standards and only let users with sufficient permissions to install the printer to the desktop. This allows all users to see and use this printer. This is considered a global or workstation printer.
1	If the current user does not have permissions to add a workstation printer (option 0), automatically add the printer so that only the current user can install, view, modify, or delete this printer. This is considered a private or user printer.
2	Only add user printers. All users (including Administrators or Power Users) that add a printer can install, view, modify, or delete the printer they installed. All printers are private or user printers.
3	Only add workstation printers. No permissions are required. All users have rights to install, view, modify, or delete iPrint printers even if the Windows workstation has been locked down. Non-iPrint printers are not affected.

The user printer feature is now enabled for users. For workstations above Windows 8.1 and later, an additional option `AllowWSACLPrinters = entry` must be set in the `iprint.ini` file for the user printer feature to work. The acronym WSACL within the AllowWSACLPrinters stands for Workstation Access Control List.

Table 5-8 *User Printer Settings for Windows 8.1 and above*

Value	Description
0	The WSACL printers enables user printing feature on OS Windows 8.1 and later. Windows 2012 R2 with V4 driver support. By, default the setting is disabled.
1	Enable the `AllowUserPrinters` settings, then enable this setting. For operating systems below Windows 8.1, the User printer feature works in the legacy way.

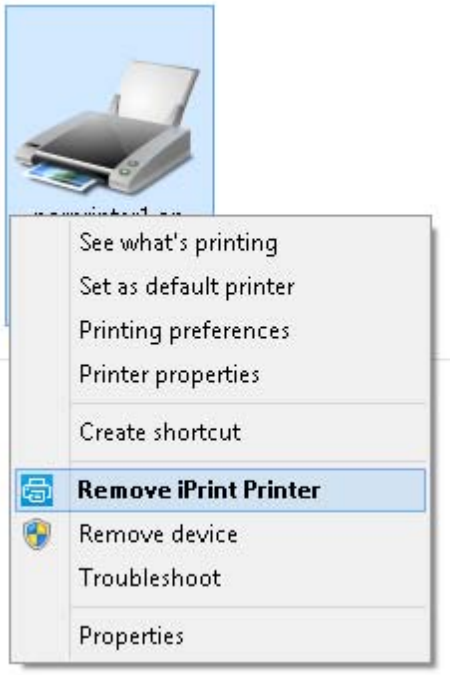
IMPORTANT: If the printers are created (legacy way) on Windows 8.1 or later workstations, you must delete the printers and install new printers. Enabling `AllowUserPrinters` settings on those printers will not enable the new User printer functionality.

Example: Three workers—Albert, Juan, and Carla—share the same computer during the day. Albert prints to an accounting printer, Juan prints to a plotter, and Carla prints to a printer in the CEO's office. The administrator set AllowUserPrinters = 2. Each worker can install the printer he or she needs but cannot see printers installed by the other users.

Deleting User Printers

To delete a User printer, do the following:

1. Start > Control Panel > Hardware and Sound > Devices and Printers.
2. Select the User printer that you want to delete and right-click:



- **Remove iPrint Printer:** Click this option to delete User printers created on workstations Windows 8.1 and above. This option is available with iPrint client 6.07 and later.
- **Remove device:** Click this option to delete User printers created on workstations below Windows 8.1.

Enabling and Disabling iPrint Client Management

You can use the `iprint.ini` file to enable and disable iPrint Client Management (iCM). Use the `iCMEnabled` value in the following ways:

- `iCMEnabled = 1`

  iCM is fully enabled. iCM attributes are identified from the full tree hierarchy.
- `iCMEnabled = 0`

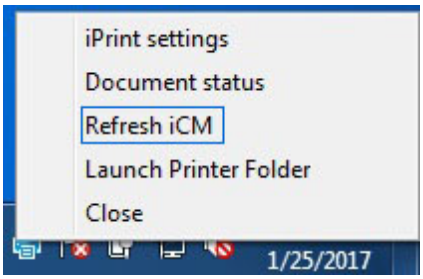
  iCM is disabled.

IMPORTANT: Using this command disables all iCM configurations created in the Client for Open Enterprise Server.

Applying iCM

A new option **Refresh iCM** is introduced to apply the iCM changes made by the administrator.

Figure 5-1 *Refresh iCM*



The user clicks **Refresh iCM** to immediately apply the iCM settings modified by the administrator. A window is displayed with results of settings that were modified.

When an user click **Refresh iCM** and if no window is displayed, then the user has to logout and relogin to the workstation to apply the changes.

Setting the Default Attributes Container for iPrint Client Management

You can use the `iprint.ini` file to set the default container that iCM should read values from. To configure this scope, use the following command:

- iCMScope = DEFAULT

  Using this command stops the system from reading iCM attributes beyond the container you specify. The iCM attributes are read on the full tree hierarchy. The iCM attributes are considered within the specified tree hierarchy.

  For example, you can use the `OU=UNIT,O=COMPANY` command to set the iCMScope to the Organizational Unit in the OU from the base of the tree. The user should be present within the specified container for iCM function to work.

  NOTE: Setting the attribute in this way does not work above the specified container.

Using iprntcmd on Linux and Macintosh

The Linux and Macintosh iPrint Clients include the iprntcmd utility that performs the same functions as iprntcmd in the Windows iPrint Client. In addition, you can use iprntcmd to upload PPD drivers to a Driver Store from the Linux iPrint Client. iprntcmd is located in `/opt/novell/iprint/bin/iprntcmd` on Linux and in `/usr/bin` on Macintosh.

Use the following parameters when executing the `iprntcmd` command:

Table 5-9 *Parameters Used with iprntcmd*

Parameters	Description
-T | --tray-icon	Displays an iPrint icon to the notification area and starts the `iprint-listener-gui` process, if it is not running.

Parameters	Description
-r | --run-listener	Launches the `iprint-listener` process if it is not already running.
-a or --addprinter *printer_uri*	Installs the specified printer.
-d or --delprinter *printer_uri*	Removes the specified printer.
-d or --delprinter all	Removes all printers. This option requires your confirmation before removing all the printers.
-d or --delprinter all --force	Remove all the printers. This option removes all the printers forcibly without any user intervention.
-g or --getdefault	Displays the default printer installed on the workstation.
-h or --help	Displays help for the command.
-j or --listjobs *printer_uri*	Lists the print jobs for the specified printer that are on the server in a pending or printing state.
-l or --listprinters	Lists printers installed on the workstation.
-L or --listprintersonserver *psm-hostname or psm-address*	Lists iPrint printers on the specified Print Manager where *psm-hostname* or *psm-address* can be a DNS name or IP address.
-p or --printfile *printer-uri filepath*	Sends a printer-ready file to the specified iPrint printer.
-P or --ppdlist	Lists the PPDs installed on this workstation.
-s or --setdefault *printer_uri*	Sets the specified printer as the default.
-t or --testpage *printer_uri*	Prints a test page to the specified printer.
-u or --uploadids *ids_uri ppd with/without a wildcard*	Uploads the specified PPD files to the indicated Driver Store where *ids_uri* is the IP address or DNS name for the Driver Store, and *ppd* is the directory path and filename to the PPD files. You can use a wildcard in the PPD filename.
-U or --uploadbroker *rms_uri rms_name ppd with/ without a wildcard*	Uploads the specified PPD files to the indicated Broker where *rms_uri* is the IP address or DNS name for the Broker's associated Print Manager, *rms_name* is the username with rights to add drivers to the broker, and *ppd* is the directory path and filename to the PPD files. You can use a wildcard in the PPD filename.
-v or --version *psm-hostname or psm-address*	Displays the server platform and version information where *server_uri* is the URI for the server.
-i or --info *printer-uri*	Displays the printer information.

Syntax

`iprntcmd` *`options parameters`*

You must use quotes around parameter information that contains a space, such as printer names and printer drivers.

Example

To install a printer named Color Printer 1 and set it as the default printer, enter the following

```
iprntcmd -a "ipp://printing.my_company.com/ipp/Color Printer 1"
```

```
iprntcmd --setdefault "ipp://printing.my_Company.com/ipp/Color Printer 1"
```

For uploading PPD files from Mac , enter the following:

```
iprntcmd -u <ids-hostname or ids-address> <ppd path with/without wild cards>
```

When prompted for a username, examples of two acceptable formats are:

`admin` or `cn=admin,o=OrgName`

For more examples, use the `man iprntcmd` command on your server console.

Macintosh Client: Additional Features

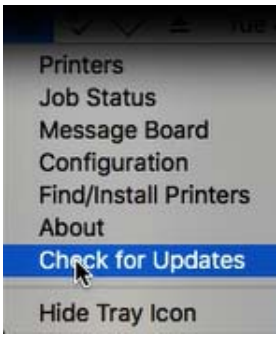
- "Automatic Update Notification" on page 78
- "Automatically Removing a Printer from the Client" on page 79
- "Automatically Redirecting a Printer" on page 79
- "Automatically Updating a Driver/Profile" on page 79
- "Using the iPrint Client Icon" on page 79

Automatic Update Notification

When a workstation boots up, iPrint checks the default printer to ensure that the workstation is using the latest iPrint Client. If necessary, a notification is launched to update the newer client.

On clicking **Update**, the client is downloaded and the installer is launched to update the client. The user can click **Later** five times after which the iPrint Client is forcefully downloaded on the workstation and client installer is launched.

If the notifications are disabled on the client workstations, then the user can click the **Check for Updates** option from the tray menu.



Automatically Removing a Printer from the Client

You can automatically remove the printer from the client, if the printer is removed from the server.

Automatically Redirecting a Printer

You can automatically redirect a printer from the client if the printer is redirected from the server. The older printer is removed and the new printer is installed on the client.

Automatically Updating a Driver/Profile

You can automatically update the client with the latest drivers available on the server.

You enable this option through iManager. For more information, see "Auto Driver/Profile Update" on page 121.

Using the iPrint Client Icon

On Macintosh workstations, the iPrint Client adds an icon to the notification area. The iPrint icon lets you receive notification when a job has printed and access iPrint client settings quickly. If the iPrint icon does not appear in your notification area, run the command `iprntcmd -T` command from your terminal.

Left-clicking the iPrint icon displays the following menu options:

- "Printers" on page 80
- "Job Status" on page 80
- "Message Board" on page 80
- "Configuration" on page 80
- "About" on page 82
- "Find/Install Printers" on page 82
- "Hide Tray Icon" on page 83

Printers

Displays the iPrint printer list, printer status, location of the printer, driver associated with the printer, and the description for the reason of printer status. You can also uninstall your printers from here.

To uninstall a printer:

1. Left-click the **iPrint** icon, then click **Printers**.
2. Select the printer that you want to uninstall.

   Press Shift to select more than one printer.
3. Click *Uninstall* to uninstall the printer.

   or

   Click *Uninstall All* to uninstall all the printers.

Job Status

Displays the name of the job, the status of the job, the size of the job, and the name and location of the printer for the job. This option also allows you to clear the job information from the job status tab.

To clear job information:

1. Left-click the **iPrint** icon, then click **Job Status.**
2. Select the job that you want to clear.

   Press Shift to select more than one job.
3. Click *Clear* to remove the job information.

   or

   Click *Clear All* to remove all the job information.

Message Board

The message board stores all the information related to the status of the printers, the jobs issued, automatic removal of printer from the client, automatic redirection of printer, and automatic driver updates.

To remove the data from the message board:

1. Left-click the **iPrint** icon, then click **Message Board**.
2. Click *Clear* to remove the data from the message board.

Configuration

You can configure the following iPrint Client Settings:

- “Managing Notifications” on page 81
- “Using a Menu Link URL” on page 81
- “Using a Proxy Server” on page 81

- “Uninstalling an iPrint Printer When You Uninstall the iPrint Client” on page 82
- “Setting the Trace Level” on page 82
- “Keeping Driver Files on Upload or Download” on page 82

Managing Notifications

iPrint notifies when your document has printed or your iPrint client needs attention.

To turn the iPrint notification on:

1. Left-click the **iPrint** icon, then click **Configuration**.
2. Select *Notify when jobs get printed or need attention*.
3. Click *Save* to save the settings.

Using a Menu Link URL

A menu link URL points you to the iPrint printer list or a customized printer installation page. You can find and install your printer from that page.

To specify the menu link URL:

1. Left-click the **iPrint** icon, then click **Configuration**.
2. Specify the menu link URL in the *Menu link URL* field.
3. Click *Save* to save the settings.

Using a Proxy Server

A proxy server is located between a client and another server that the client is trying to communicate with. Proxy servers are often used in conjunction with a firewall to keep internal addresses private by exposing only the proxy server’s address to external users. If you have users that need to submit print jobs through a proxy server, you can use the iPrint Clients Proxy setting. The Client sends all print-related requests to the proxy server. The proxy server then redirects the print job to the correct iPrint server.

For example, Juan is a laptop user who has installed and printed to a variety of iPrint printers at the company’s headquarters. While he is on the road, Juan wants to submit a report to his boss. Rather than sending the report by e-mail or fax, Juan decides to send it to the printer near his boss. When he tries to send the report to the printer, he receives an error that the printer cannot be found. He knows that the company uses a firewall and a proxy server. He types the proxy server address in the iPrint Proxy settings, then tries to print the report again. This time the print job is accepted. The print job travels from his laptop to the proxy server. The proxy server redirects the print job to the printer’s Print Manager, where the print job is spooled and forwarded to the printer.

To set the proxy server address:

1. Left-click the **iPrint icon**, then click **Configuration**.
2. Specify the URL in the *Proxy URL* field.
3. Click *Save to save the settings*.

NOTE: If you do not want to use the proxy server, delete the URL specified in the *Proxy URL* field and save the settings.

Uninstalling an iPrint Printer When You Uninstall the iPrint Client

1. Left-click the **iPrint icon**, then click **Configuration**.
2. Select *Uninstall iPrint Printers on iPrint client uninstallation*.
3. Click *Save to save the settings*.

Setting the Trace Level

The trace level determines how much debugging information is displayed.

To set the trace level:

1. Left-click the **iPrint** icon, then click **Configuration**.
2. Select one of the following options:

   Off: No error tracing.

   Shell: Debug output is displayed on the shell where the application started.

   File: Debug output is sent to `/home/<user>/.iprint/trace.txt`. If the user's home directory cannot be determined, the debug output is sent to `/var/opt/novell/log/iprint/client/<pid>-<uid>_trace.txt`.

   All: Debug output is sent to both the shell and the file.
3. Click *Save* to save the settings.

Keeping Driver Files on Upload or Download

This option allows you to store your driver files in the temporary folder when you upload or download the drivers for printer installation.

1. Left-click the **iPrint** icon, then click **Configuration**.
2. Select *Keep driver files on upload or download*.
3. Click **Save** to save the settings.

   When you upload drivers for printer installation, temporary files are stored at `/tmp/iprint-<username>/tmp-xxxxxx`. This file is removed after upload, if the **Keep driver files on upload or download** option is not selected.

   When you download drivers for printer installation, temporary files are stored at `/tmp/iprint-<username>/tmp-xxxxxx/download-xxxxxx`. This file is removed after download, if the **Keep driver files on upload or download** option is not selected.

About

Displays the version of the iPrint Client installed on your workstation.

Find/Install Printers

Opens a browser window to the menu link URL specified in the *Configuration* tab of the tray icon. The menu link URL points you to the iPrint printer list or a customized printer installation page.

You can find and install your printers from there.

Hide Tray Icon

Removes the iPrint icon from the notification area until the `iprint-listener-gui` process is restarted. To make the icon reappear in your notification area, run the `iprntcmd -T` command from your terminal.

Using iPrint Client Management

iPrint Client Management (iCM) includes functionality similar to the Remote Printer Management feature included in Novell Distributed Print Service, which lets you designate printers to be installed on a workstation when a user logs in to the workstation using the Client for Open Enterprise Server. iCM also lets you control the iPrint Client configuration, making it easier to configure the iPrint Client without visiting each workstation. When the user logs in to the workstation using the Client for Open Enterprise Server, the iPrint Client settings you designate are configured on the user's workstation.

iCM is available for Windows 8/8.1/10/Windows Server 2016/Windows Server 2019, and requires the following:

- Novell iPrint Client latest version (install after the Client for Open Enterprise Server)
- `iprint.ini`

NOTE: iPrint Client Management does not support dynamic groups.

With iCM, you manage a set of attributes on a given eDirectory tree regardless of whether the printers are hosted on an Open Enterprise Server NetWare or a Linux server, because iCM is configured and managed through eDirectory objects.

Use the following information to install and configure iCM:

- "Understanding the Schema Update" on page 83
- "Deploying iPrint Client Management" on page 84
- "Configuring iCM for Windows / Active Directory (AD) environments without Client for Open Enterprise Server" on page 84
- "Managing iPrint Client Settings" on page 84
- "Automatically Installing Printers" on page 85
- "Using Advanced Settings" on page 87

Understanding the Schema Update

iPrint Client Management requires you to extend the eDirectory schema. The `iprint.sch` file (found in - `/opt/novell/sch/iprint.sch`) contains the schema extension, which adds some optional attributes to Organization, Organizational Unit, Groups, and User object class definitions. The attributes are:

- iPrintiCMPrinterList
- iPrintiCMClientTrayURI
- iPrintiCMClientProxyURI
- iPrintiCMClientFlags

Users should be able to read these new attributes on their user objects; however, if you plan to configure iCM at an Organization, Organizational Unit, or Group object level, users might need the Read right to read the attributes. The first time you access iCM on an Organization, Organizational Unit, or Group object in iManager, iManager attempts to assign the Read right to the attributes. Then users should be able to read these attributes through inheritance on subcontainers and groups. If iManager cannot assign the read right to the Organization, Organizational Unit, or Group object, your configuration is saved, but a message appears explaining that rights to the attributes could not be granted. You need to grant rights to these iPrint attributes by using either the eDirectory Administration or Trustee task in iManager.

TIP: To avoid multiple explicit rights assignments for the iCM attributes, you should make your first iCM assignment as high in the eDirectory tree as possible so that the rights can flow down the tree. You could even make an iCM assignment so that the Read right is set, and then disable the iCM assignment because this does not remove the Read right to the attributes.

Deploying iPrint Client Management

1. Distribute the iPrint Client version 4.26 or later.

   For more information, see "Windows: Distributing the iPrint Client" on page 51. If the iPrint Client is has already been distributed, see "Updating the iPrint Client" on page 66.

   If you use `iprint.ini` to distribute the iPrint Client, you need to allow enough time for users to update to the new client before configuring iCM. If you do not allow enough time, the client attempts to update a workstation at the same time it is trying to deploy the settings in iCM.

2. Configure iPrint Client Management in iManager.

   See "Managing iPrint Client Settings" on page 84 or "Automatically Installing Printers" on page 85 for more information.

Configuring iCM for Windows / Active Directory (AD) environments without Client for Open Enterprise Server

The Novell iPrint Windows Client (version 5.72 and later) now supports Windows / Active Directory environments without the Client for Open Enterprise Server. This new feature provides shared authentication with the Windows Login, and also supports iCM for printer distribution and client settings. The following pre-requisites should be met:

- Synchronization of users, groups, and containers (via Novell Identity Manager or a similar synchronization tool)
- Standardization on LDAP user names that require unique user names and require the uniqueID attribute to be set

Managing iPrint Client Settings

You can standardize the iPrint Client settings for users by using iCM Client Configuration to define the attributes for an Organization, Organizational Unit, Group, or a User Object. The attributes are delivered as a complete set, meaning that if you change only one attribute, all of the attributes are

delivered to the client. The changes are not additive, so you cannot change the value of an attribute for an object and change the value of a different attribute on another object. Only the set of attributes closest to the user's object are used.

When a user logs in, iCM walks up the tree from the user's container to the highest container in the user's fully distinguished name. Then iCM starts applying the iCM attributes in each container as it walks back down to the user object. Then the user's group membership list is queried for the same attributes. Those closest to the User object have a higher priority. The set of attributes on or closest to the User object is always used.

IMPORTANT: Using iCM on group objects can simplify making assignments, but using iCM on multiple groups can cause undesired results. You should create a new Group object with a descriptive name so that you can control the desired results for users that you assign to that group.

To configure the iCM client attributes:

1. In iManager, click **iPrint** > **iPrint Client Management**.
2. Browse to and select the Organization, Organizational Unit, Group, or User object you want to automatically configure iPrint Client Settings for.
3. Click **Client Configuration**.
4. Configure the attributes you want for the iPrint Client on the workstation.

   Click **Help** for explanations about the attributes.
5. Click **OK** to save the changes.

A log file of the iCM actions taken and ignored is stored in `c:\ndps\users\`*`username`*`\icmlog.txt`, where *username* is the name used to log in to Windows by using the Client for Open Enterprise Server Login. The file is created and updated when the user uses the Client for Open Enterprise Server to log in to the workstation.

Automatically Installing Printers

iPrint Client Management Printer Configuration lets you designate printers to be downloaded and installed automatically on user workstations when users log in to the network. These printers appear in the user's printers folder, ready for use. You can also use this feature to remove printers, assign a printer to be the default printer, and set a printer to be a temporary printer so that it is removed when the workstation is rebooted.

iCM configures printers on workstations based on assignments made on the User object, Group object, Organization, and Organizational Unit container. When you use iManager to designate a printer for automatic installation on a user's workstation, the associated eDirectory Container, Group, or User object is updated with this information.

NOTE: iPrint Client Management does not support dynamic groups.

The actions taken are cumulative, meaning that action is taken for each assignment you made. For example, if you add two printers at one level, then add three more printers at another level, the workstation has all five printers installed. If you have more than one printer set as the default, the last printer installed is set as the default.

When a user logs in, iCM starts searching at the highest container in the user's full distinguished name, looking for the iCM Printer Configuration associated to containers and groups. The search continues through subcontainers down to the User object. Printers continue to be added or removed to the workstation as specified by iCM. If the **Allow Only Specified Printers to Reside on Workstation** option is enabled, any actions to printers specified above that container or group in the user's fully distinguished name are ignored, but any actions to printers specified between that point and the User object are taken.

- If the client finds a printer designated for installation that has not yet been installed, it is automatically installed.
- If a currently installed printer is added to the **Printers to Remove** list, that printer is automatically uninstalled.
- If you designate a different printer to be the default, the change is made.
- Using **Do Not Update Workstations** turns off iCM for printers at that container, group or user, but actions for iCM printers found on other containers or groups are taken.

WARNING: Using iCM on group objects can simplify making assignments, but using iCM on multiple groups can cause undesired results. You should create a new Group object with a descriptive name so that you can control the desired results for users that you assign to that group.

To automatically install printers:

1. In iManager, click **iPrint** > **iPrint Client Management**.
2. Browse to and select the Organization, Organizational Unit, Group or User object you want to automatically install printers for.
3. Configure the attributes you want for the **Printer Configuration** option.

   Do Not Update Workstations: iCM for printers is disabled and printers are not installed or removed from workstations. Printers already installed are not altered.

   Allow Only Specified Printers to Reside on Workstations: Allow only the iPrint printers specified in the **Printers to Install** list to reside on the workstation. All other iPrint printers on the workstation are removed. Non-iPrint printers are not affected.
4. Use the buttons to modify the **Printers to Install** list.

   If you select a printer to be the default and want to remove the Set as Default attribute, click the button next to to the **Default Printer** field.
5. Modify the **Printers to Remove** list.
6. Click **OK** to save the changes.

A log file of the iCM actions taken and ignored is stored in `c:\ndps\users\`*`username`*`\icmlog.txt`, where *username* is the name used to log in to Windows using the Client for Open Enterprise Server Login. The file is created and updated when the user uses the Client for Open Enterprise Server to log in to the workstation.

Using Advanced Settings

The iPrint Client Management Advanced Settings page lets you configure how far up the eDirectory tree iCM should look for iCM client settings and printers. You can also configure whether the iCM results dialog box should display on the workstations, which is useful for troubleshooting the iCM results.

1. In iManager, click **iPrint** > **iPrint Client Management**.
2. Browse to and select the Organization, Organizational Unit, Group or User object you want to configure the settings on.
3. Click **Advanced Settings**.
4. Configure these settings as needed:

   Ignore iPrint Client Management (iCM) settings on parent containers: Limits the scope used to find iCM client settings and assigned printers to the object where the assignment is made and below. You can enable this setting on User, Group, and Container objects. You should enable this setting to limit traffic on the network, especially across slow network links.

   When a user logs in, iCM checks the User object and group memberships, then it walks up the eDirectory tree from the user object to the root-most container to determine where iCM assignments have been made. If iCM encounters the Ignore Settings on Parent Containers attribute, iCM stops walking up the tree on that object. Then, iCM implements the iCM client settings and printers on the workstation.

   To determine the iCM printers for the workstation, iCM searches down to the User object, adding and removing iCM printers as specified on each Container, Group, or User object. For iCM client settings, iCM uses the set of iCM client attributes closest to or on the User object.

   The attributes are delivered as a complete set, meaning that if you change only one attribute, all of the attributes are set on the client. The changes are not additive, so you cannot change the value of one attribute for an object and change the value of a different attribute on another object. Only the set of attributes closest to or on the user's object are used.

   The following table describes the behaviors when enabling this setting on different objects.

Object	Behavior
User	Only the iCM client settings and printers assigned to the User object are used. iCM does not check any group memberships, the User object's container, or parent containers.
Group	iCM checks assignments on the User object and all associated groups, but does not check the User object's container or parent containers. All group memberships are read and assignments are considered even if this setting is enabled on just one group. This is useful if you want to apply iCM client settings or assigned printers from a group membership, but do not want any iCM client settings or assigned printers from the User object's container. **IMPORTANT:** Using iCM on Group objects can simplify making assignments, but using iCM on multiple groups could cause undesired results. You should create a new Group object with a descriptive name so that you can control the desired results for users that you assign to that group.

Object	Behavior
Organization or Organizational Unit	iCM checks assignments on the user object, all associated groups, and each container up to a parent container where this setting is enabled.

Display iCM results in a dialog box on workstations: Displays a window on the workstation that shows the printers that were installed and removed.

5 Click **OK** to save the changes.

Uninstalling the Novell iPrint Client

Uninstalling the Novell iPrint Client is dependent on your workstation's operating system.

- "Uninstalling the Linux iPrint Client" on page 88
- "Uninstalling the Macintosh iPrint Client" on page 88
- "Uninstalling the Windows iPrint Client" on page 88

Uninstalling the Linux iPrint Client

You can remove the Linux iPrint Client RPM from a terminal prompt. Depending on whether a high-security (sh) or low-security (sl) Client, use one of the following commands:

```
rpm -e novell-iprint-xclient-sh
```

```
rpm -e novell-iprint-xclient-sl
```

NOTE: You need to delete the printers manually after uninstalling the Linux iPrint Client on the workstation. For more information, refer "Uninstalling iPrint Printers" on page 62.

Uninstalling the Macintosh iPrint Client

You can uninstall iPrint from your workstation.

1. Select **Go** > **Computer** > **Applications** > **iPrint Uninstallation**.
2. Double-click **iPrint Uninstallation**.
3. Click *Yes* to uninstall the iPrint Client.

Uninstalling the Windows iPrint Client

To remove the Novell iPrint Client, use the **Add or Remove Programs** option in the Windows Control Panel.

NOTE: When you uninstall the Windows iPrint Client, all iPrint printers are removed from the workstation.

Printing from LPR Print Systems to iPrint

The implementation of LPR printing (BSD-style printing) in UNIX systems and other systems varies greatly. Typically, UNIX or LPR users know how to set up LPR printing on their systems. In order to complete the configuration, users need to know the **LPR Host** and the **LPR Printer/Queue** information, which is the Printer Agent name, provided in iManager. The iPrint Client is not required for LPR printing.

To set up an iPrint printer to accept LPR print jobs, you need to enable LPR/LPD printing for the printer. See "Configuring LPR Printers" on page 134 for more information.

What's Next

- Chapter 8, "Customizing iPrint," on page 95: With your print system set up and the client distributed to the workstation, you can focus on how your users can browse to and install iPrint Printers using their web browser.
- Chapter 10, "Managing Your Print System," on page 109: Helps you monitor and maintain your print system.

6 Migrating iPrint from NetWare 6.5 SP8 to OES 2018 SP3

The OES 2018 SP3 Migration Tool is a plug-in that is made up of Linux command line utilities with a GUI wrapper. You can migrate iPrint to an OES 2018 SP3 server through either the GUI Migration Tool or through the command line utilities.

NOTE: When migrating a Printer Agent from NetWare 6.5 SP8 to OES 2018 SP3, the User Hold settings are not migrated.

To get started with migration, see OES 2018 SP3: Migration Tool Administration Guide. For more information on migrating iPrint, see “Migrating iPrint to OES 2018 SP3”.

7 Running iPrint in a Virtualized Environment

iPrint runs in a virtualized environment just as it does on a physical NetWare server, or on a physical server running OES 2018 SP3, and requires no special configuration or other changes.

To get started with Xen virtualization, see the Virtualization with Xen documentation.

To get started with KVM virtualization, see the Virtualization with KVM documentation.

To get started with third-party virtualization platforms, such as Hyper-V from Microsoft and the different VMware product offerings, refer to the documentation for the product you are using.

For information on setting up virtualized OES 2018, see "Installing, Upgrading, or Updating OES on a VM" in the OES 2018 SP3: Installation Guide.

8 Customizing iPrint

You can use several different methods to customize iPrint for your company:

- "Setting Up Location-Based Printing" on page 95
- "Customizing the iPrint HTML Interface" on page 98
- "Installing a Printer as the Default on Windows" on page 98

Setting Up Location-Based Printing

When you set up location-based printing, each Print Manager creates an iPrint Printer List that users can access at http://*server_DNS_or_IP_address*/ipp. You can make installing printers even easier by creating customized Web pages that link the iPrint Printer lists together or by using the iPrint Map Designer to create a map showing the location of printers.

- "Creating Location-Based Maps with iPrint Map Designer" on page 95
- "Creating Customized Printer Lists" on page 97

Creating Location-Based Maps with iPrint Map Designer

You can use the iPrint Map Designer tool to quickly create a map showing printer locations. The tool lets you import floor plans as background images that can be used to drag and drop printers onto actual locations. These maps are then published on a Web server so users can install printers that are closest to their location.

After the map is created, you must use the iPrint Map Designer to modify or update it. Changes to a map file that are made outside of the iPrint Map Designer are not supported. If you need to add links to a map, you should create a frameset file and then display the map file in one frame and display your links in a different frame.

Prerequisites

- ❒ Windows 8/8.1/10/Windows Server 2016/Windows Server 2019 operating system
- ❒ Microsoft Internet Explorer 6.0 or later
- ❒ iPrint Client installed on the workstation

- "Creating a Map for Printing" on page 96
- "Adding Printers from Different Print Managers" on page 97
- "Hosting Maps on a Web Server" on page 97
- "Using the Keyboard with iPrint Map Designer" on page 97

Creating a Map for Printing

Before creating the map, ensure that you meet the following prerequisites:

- ❒ All of your background images (maps) are copied to the following location on the server you use for iPrint management:

  `/var/opt/novell/iprint/htdocs/images/maps`

  You can use JPEG, GIF, and BMP images for backgrounds and printer icon images. These files are detected by iPrint Map Designer at startup. A default set of printer icons is included.

- ❒ All of your custom printer icons are copied to the following location on the server you use for iPrint management:

  `/var/opt/novell/iprint/htdocs/images/printers`

1. To start the iPrint Map Designer, go to http://*server_address*/maptool.htm in Internet Explorer, where *server_address* is the server's IP address or DNS name of the server where the iPrint Manager is running.

   If you want to save the map to this server, you need to be authenticated to the server.

2. Select a map from the **Background** drop-down list.

3. (Optional) Add a printer to the map:

   3a From the **Printer Icon** field, select the type of printer and icon size you want.

   Sizes range from 1 to 6, with 1 being the largest. Icons with a C indicate color printers.

   3b Click the **Printer** icon and drag the printer to the desired location on the map.

   3c Next to the **Printer List** field, click the **Browse** icon and specify the IP address or DNS name of the server where the Print Manager is running.

   3d From the **Printer List**, select the Printer Agent you want associated with this printer icon.

   The **Printer URL** and **Mouse Over Text** are automatically filled in with the Printer Agent information.

   By default, **Mouse Over Text** displays the Printer Agent's name. You can override this information by specifying the text you want to display when a user moves the mouse over the Printer icon.

   3e (Optional) In the **Printer Caption** field, specify the information to display, using Enter to parse the information into multiple lines.

   3f (Optional) From the menu bar, click **Font** to change the base font, color, and size for text on the map.

4. (Optional) Edit a printer's information by clicking the desired printer's icon and then editing the printer information fields.

   To deselect a **Printer** icon while you are in the map, click anywhere in the design area.

5. Click *Save* to save the map in an HTML format. You can upload this HTML file to a Web server and use an HTML editor to customize the page.

IMPORTANT: Do not click **Refresh** or exit Internet Explorer without saving the map.

To retrieve and modify an existing map file, click **Open** and browse to the directory where the map is located.

Adding Printers from Different Print Managers

You can add printers from different Print Managers to the same map. First, add the printers from one Print Manager. Then click the **Browse** icon and select a different manager.

If you need to add or modify printers from a previously used Print Manager, click a Printer icon from that manager and the Printer List is populated with printers from that manager.

Hosting Maps on a Web Server

After you create your maps, you need to post them on a Web server. Copy the contents of the `\ippdocs` directory and its subdirectories to the Web server in order for your maps and iPrint to work properly. You can link to your maps from your company's internal Web page or send the URL to your users.

NOTE: On NSS volumes for Cluster environments, `\ippdocs` is an "Alias" under the `/etc/opt/novell/iprint/httpd/conf/iprint_g.conf` file, which points to the `/media/nss/NSSVOL1/var/opt/novell/iprint/htdocs/` directory. In case of a non-NSS setup, `\ippdocs` points to the `/var/opt/novell/iprint/htdocs/` directory.

Using the Keyboard with iPrint Map Designer

You can use the keyboard to create maps in the iPrint Map Designer. With the focus in the design area, press the Insert key to insert a printer icon. Then use the arrow keys to move the icon within the design area.

Creating Customized Printer Lists

Printer lists let users select printers from categories that are meaningful to them. For example, you could create a list of printers by building location, department names, or eDirectory context. iPrint generates an iPrint Printer List for each Print Manager.

To create a custom list, you must use an HTML editor and create links to the different generated lists or create a Web page by using the printer's IPP URL. This URL is displayed when you enable IPP for a printer.

To view a printer's URL:

1. In iManager, click **iPrint** > **Manage Printer**.
2. Browse to and select the printer you want.
3. Click **Client Support > iPrint Support**.

   The printer's URL is displayed under Current iPrint URL.

Customizing the iPrint HTML Interface

You can edit any of the HTML files provided in `var/opt/novell/iprint/htdocs/examples/example1/` or you can create your own files to customize iPrint for your environment. For information on the HTML interface, see Appendix D, "Configuring the iPrint HTML Interface," on page 183.

- In the `examples` directory, Example 1 shows a fully graphical interface for locating and installing printers using standard HTML. This type of approach can also be created using the iPrint Map Designer. For more information, see "Creating Location-Based Maps with iPrint Map Designer" on page 95.

  Use your web browser to view this example from `var/opt/novell/iprint/htdocs/examples/example1/innerweb.html`

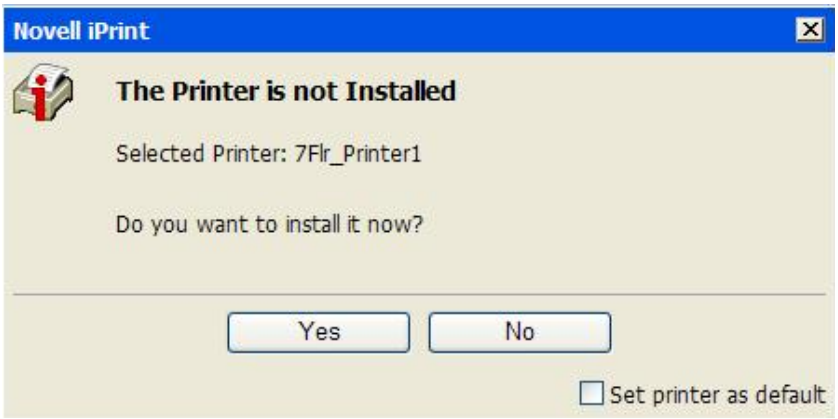
- In the `examples` directory, Example 2 shows a lower-maintenance approach for locating and installing printers using standard HTML.

  Use your web browser to view this example from `var/opt/novell/iprint/htdocs/examples/example2/innerweb.htm`

Installing a Printer as the Default on Windows

When users install a printer on a Windows workstation from the iPrint Printer List Web Page, they can choose to set the printer they are installing as the default printer by selecting the **Set Printer as Default** check box in the **Printer Is Not Installed** dialog box. When this option is selected, the printer is installed and set as the default printer. When it is not selected, the printer is installed and no change is made to the default printer.

Figure 8-1 *Setting a Printer as the Default While Installing a Printer*



You can customize the settings that users see when they install a printer:

1. Edit `iprint.js`, located in the following directory:

   `/var/opt/novell/iprint/htdocs/scripts`

2. Modify the var defTypeGbl = setting to one of the following:

Setting	Description
DEF_TYPE_OPTION_YES	Displays the **Set as Default** check box and marks it as selected.
DEF_TYPE_OPTION_NO	Displays the **Set as Default** check box, but does not select it.
DEF_TYPE_OPTION_NONE	Hides the **Set as Default** check box.

3 Save the file.

When the file is saved, the change is effective immediately.

9 Configuring iPrint with OES Cluster Services

Using iPrint in a cluster can help you to make printing more consistently available for your users.

- "Understanding the Benefits of High Availability Printing" on page 101
- "Prerequisites" on page 101
- "Setting up the Cluster Environment for iPrint" on page 102
- "Starting the iPrint Cluster Resource" on page 106
- "Using the iPrint Web Page" on page 107
- "Changing Start, Failover, and Failback Modes for Printing" on page 107
- "Troubleshooting iPrint in a Cluster" on page 108

Understanding the Benefits of High Availability Printing

Running iPrint on a cluster provides the following benefits:

- By configuring the Print Management Database to reside on a shared disk cluster volume, you no longer need to replicate information to achieve high availability.
- The cluster console GUI enables you monitor and control the location of cluster volumes with the Driver Store and Print Manager services using them from a single management workstation.
- Because cluster volumes are tightly consistent and highly available, distributed print management tasks are simplified.
- If a server fails, the cluster volume containing the Print Management Database and spool area automatically remounts on a surviving server in the cluster. The Driver Store and Print Manager also automatically restart without user intervention.
- On restart, the Driver Store and Print Manager discover the Print Management Database on a cluster volume mounted on their server. Because the cluster volume is the same regardless of the server it is mounted on, no print-related information is lost or out-of-date.

Prerequisites

OES Cluster Services can be configured either during or after OES 2018 SP3 installation.

- Ensure that OES Cluster Services has been installed. For information on installing OES Cluster Services, see "Installing, Configuring, and Repairing OES Cluster Services" in the OES 2018 SP3: OES Cluster Services for Linux Administration Guide.
- Identify the nodes to host the iPrint service.

Setting up the Cluster Environment for iPrint

- "Clustering on an NSS File System" on page 102
- "Clustering on a Linux POSIX File System" on page 103
- "Modifying the Load, Unload, and Monitor Scripts" on page 106

Clustering on an NSS File System

1 Create NSS pools if they do not already exist, and configure the shared pools to work with OES Cluster Services.

For more information on the configuration, see "Configuring and Managing Cluster Resources for Shared NSS Pools and Volumes" in the OES 2018 SP3: OES Cluster Services for Linux Administration Guide.

2 Ensure that the pool resource where you want to run the iPrint service is cluster-enabled.

For more information, see "Cluster-Enabling an Existing NSS Pool and Its Volumes" in the OES 2018 SP3: OES Cluster Services for Linux Administration Guide.

3 Ensure that the pool resource is online.

The volumes of a cluster pool resource are mounted and dismounted by onlining and offlining the pool resource. For more information, see "Onlining and Offlining (Loading and Unloading) Cluster Resources from a Cluster Node" in the OES 2018 SP3: OES Cluster Services for Linux Administration Guide.

4 Run the `iprint_nss_relocate` script located at `/opt/novell/iprint/bin`.

For more details on this script, see "Running the `iprint_nss_relocate` script" on page 38.

5 Migrate the pool resource to the next identified node and run the `iprint_nss_relocate` script with the same arguments. For more information, see "Cluster Migrating Resources to Different Nodes" in the OES 2018 SP3: OES Cluster Services for Linux Administration Guide.

6 Repeat Step 4 and Step 5 on all the iPrint cluster nodes.

7 Configure iPrint services by following the instructions in "Setting Up iPrint" on page 26.

When you configure iPrint, ensure that all references to IP addresses or DNS names are pointing to the resource's IP address or to the DNS name.

IMPORTANT: During creation of the Print Manager, ensure that you do not select the **Start Print Manager after Creation** check box.

At this stage you will encounter a certificate error, indicating that the hostname or IP address of the server where you are the print object does not match any of the certificates on the server where iManager is running. For more information on resolving certificate errors, "Understanding and Managing Certificates" on page 109.

8 Edit the load script for the Cluster Pool. Add the following lines to the existing load script before the `exit 0` statement.

```
ignore_error mv /media/nss/NSSVOL1/var/opt/novell/iprint/iprintgw.lpr /
media/nss/NSSVOL1/var/opt/novell/iprint/iprintgw.lpr.bak

exit_on_error systemctl start novell-idsd.service
```

```
exit_on_error systemctl start novell-ipsmd.service
```

Replace `/media/nss/NSSVOL1` in the script with your actual cluster volume mount point.

For information on editing a load script, see "Modifying the Load, Unload, and Monitor Scripts" on page 106.

9 Edit the unload script for the Cluster Pool. Add the following lines to the existing unload script after the `/opt/novell/ncs/lib/ncsfuncs` statement:

```
ignore_error systemctl stop novell-ipsmd.service
ignore_error systemctl stop novell-idsd.service
```

For information on editing an unload script, see "Modifying the Load, Unload, and Monitor Scripts" on page 106.

10 View the current Preferred Nodes assignments, and if necessary, click the arrow button to assign or unassign servers to the print volume resource.

You can click the up-arrow or down-arrow buttons to change the failover order of the servers assigned to the print volume.

11 If you add a new node to the cluster later, change the file as follows:

11a Comment out the load and unload scripts for the Print Manager and Driver Store.

11b Migrate the resource to the new node.

11c Run the `iprint_nss_relocate` script on the new node.

11d Remove the comment tag from the load and unload scripts.

NOTE: If you rename the NSS volume that hosts the Print Manager, the iPrint IPP page fails to display and the iPrint configuration breaks. To re-establish the symbolic links broken because of the volume rename, refer to "iPrint Service Fails when Renaming a Volume Where iPrint Is Hosted" on page 153.

Clustering on a Linux POSIX File System

When setting up a new iPrint cluster resource from the template on Linux, a setup wizard guides you through the process sequentially.

To configure cluster resources for shared Linux POSIX volumes, refer to Upgrading and Managing Cluster Resources for Linux POSIX Volumes with CSM Containers.

1 In iManager, click **Clusters** > **My Clusters**, then select the cluster.

If the cluster does not appear in your personalized list of clusters to manage, you can add it. Click **Add**, browse and select the cluster, then click **OK**. Wait for the cluster to appear in the list and report its status, then select the cluster.

2 Select the **Cluster Options** tab.

3 Under **Cluster Objects**, click **New**.

4 Select **Resource**, then click **Next**.

5 Specify a name in the **Cluster Resource Name** field.

6 Use the object selector for **Inherit from Template** to browse to and open the Cluster object you created, then select the **iPrint_Template**.

7 Select the **Define Additional Properties** check box, then click **Next**.

8 Edit the load script by making the changes outlined in the following table:

Heading	Description
define the IP address	Specify the actual IP address you want to use for the resource. For example, 10.10.10.10.
define the file system type	Specify the file system type.
define the volume group name	Specify the name of the LVM volume group you have created.
define the device name	`/dev/$VOLGROUP_NAME/iprint`
define the mount point	`/mnt/iprint`. If a different mount point is selected for the shared disk, ensure that the same mount point is specified in the unload script.
activate the volume group	`exit_on_error vgchange -a ey $VOLGROUP_NAME`. Replace $VOLGROUP_NAME.
mount the file system	`exit_on_error mount_fs $MOUNT_DEV $MOUNT_POINT $MOUNT_FS`, where $MOUNT_DEV is the device name and $MOUNT_POINT is the mount point you defined.
add the IP address	`exit_on_error add_secondary_ipaddress $RESOURCE_IP`, where $RESOURCE_IP is the IP address.
run the iPrint relocate script	`exit_on_error /opt/novell/iprint/bin/iprint_relocate $MOUNT_POINT`, where $MOUNT_POINT is the mount point you defined.
start the iPrint driver store & printer manager	`exit_on_error /opt/novell/iprint/bin/ncs_iprint_svc_start`.

9 Set the *timeout* value in the load script to three minutes, then click **Next**.

10 Edit the unload script by making the changes outlined in the following table:

Heading	Description
define the IP address	Specify the actual IP address you want to use for the resource. For example, 10.10.10.10.
define the file system type	Specify the file system type.
define the volume group name	Specify the name of the LVM volume group you have created.
define the device name	`/dev/$VOLGROUP_NAME/<LVM logical volume>`
define the mount point	`/mnt/iprint`. If a different mount point is selected for the shared disk, ensure that the same mount point is specified in the unload script.
stop the printer manager and iPrint driver store	Printer Manager: `ignore_error systemctl stop novell-ipsmd.service` iPrint Driver Store: `ignore_error systemctl stop novell-idsd.service`

Heading	Description
delete the IP address	`ignore_error del_secondary_ipaddress $RESOURCE_IP`, where $RESOURCE_IP is the IP address.
unmount the file system	`exit_on_error umount_fs $MOUNT_DEV $MOUNT_POINT $MOUNT_FS`, where $MOUNT_DEV is the device name, and $MOUNT_POINT is the mount point you defined.
deactivate the volume group	`exit_on_error vgchange -a n $VOLGROUP_NAME`.

11 Set the *timeout* value in the unload script to three minutes, then click **Next**.

12 Edit the monitor script by making the changes outlined in the following table:

Heading	Description
define the IP address	Specify the actual IP address you want to use for the resource. For example, 10.10.10.10.
define the file system type	Specify the file system type.
define the volume group name	Specify the name of the LVM volume group you have created.
define the device name	`/dev/$VOLGROUP_NAME/iprint`
define the mount point	`/mnt/iprint`. If a different mount point is selected for the shared disk, ensure that the same mount point is specified in the unload script.
check the logical volume	`exit_on_error status_lv $VOLGROUP_NAME`.
check the file system	`exit_on_error status_fs $MOUNT_DEV $MOUNT_POINT $MOUNT_FS`, where $MOUNT_DEV is the device name, and $MOUNT_POINT is the mount point you defined.
check the IP address	`exit_on_error status_secondary_ipaddress $RESOURCE_IP`, where $RESOURCE_IP is the IP address.
check the iPrint driver store & printer manager	`systemctl status novell-idsd.service` and `systemctl status novell-ipsmd.service`.

13 View the current Preferred Nodes assignments, and click the arrow button to assign or unassign servers to the print volume resource.

You can click the up-arrow or down-arrow button to change the failover order of the servers assigned to the print volume.

If you add a node to the cluster later, it might be added to the Assigned Nodes list. You must check this list after adding nodes to ensure that iPrint fails over to the desired nodes.

14 Click **Finish**.

Modifying the Load, Unload, and Monitor Scripts

You can view or modify the load, unload, or monitor scripts even after you create a resource.

1. Log in to iManager.
2. Under Roles and Tasks, select **Clusters > My Clusters**, then select the cluster.

   If the cluster does not appear in your personalized list of clusters to manage, you can add it. Click **Add**, browse and select the cluster, then click **OK**. Wait for the cluster to appear in the list and report its status, then select the cluster.
3. On the Cluster Manager page or Cluster Options page, select the cluster resource to view its properties, then click the **Scripts** tab.
4. Click the **Load Script**, **Unload Script**, or **Monitor Script** links to view or modify the scripts. If you modify a script, click **Apply** to save your changes before you leave the page.

   Changes do not take effect until you take the resource offline, and bring it online again.

Starting the iPrint Cluster Resource

1. In iManager, click **Clusters** > **My Clusters**, then select the cluster.

   If the cluster does not appear in your personalized list of clusters to manage, you can add it. Click Add, browse and select the cluster, then click OK. Wait for the cluster to appear in the list and report its status, then select the cluster.
2. Select the Cluster object.
3. Under **Cluster State**, select the cluster resource you created for print.
4. Click **Online** to load the iPrint cluster resource.

   If the resource does not load, ensure that the shared disk is running and the load script contains correct entries.
5. Select the node you want to load the resource on.
6. Create a driver store. For more information, see "Creating a Driver Store" on page 28.
7. Create a Print Manager.

   For more information, see "Creating a Print Manager" on page 33.

   You can have more than one Print Manager running in a cluster, but only one can run on a cluster resource node. For example, assume there is a four-node cluster with serverA, serverB, serverC, serverD, and two Print Managers. One Print Manager is running on serverA and other on serverB and they are assigned to fail over to serverC and serverD. If you assign the Print Managers to fail over to the same cluster resource node, the Print Managers might collide and not fail over.

When you load the iPrint cluster resource, you can add printer drivers to the Driver Store and create printers. For more information, see "Managing Printer Drivers" on page 30 and "Creating a Printer" on page 36.

Using the iPrint Web Page

If you are using the default iPrint Web pages, or embedding URLs in custom iPrint Web pages, ensure that the links to the default iPrint Printer List Web page or other custom pages in `\ippdocs` must use the DNS name or IP address of the print service. This is the same IP address used in the cluster load script for iPrint. During a failover, this IP address moves with the shared volume to other servers in the cluster.

NOTE: On NSS volumes for Cluster environments, `\ippdocs` is an "Alias" under the `/etc/opt/novell/iprint/httpd/conf/iprint_g.conf` file, which points to the `/media/nss/NSSVOL1/var/opt/novell/iprint/htdocs/` directory. In case of a non-NSS setup, `\ippdocs` points to the `/var/opt/novell/iprint/htdocs/` directory.

If you use the server's DNS name or IP address or any other IP address other than the one assigned to the iPrint Resource, links to iPrint Web pages break when iPrint fails over to a different node in the cluster. iPrint links display a blank page or return an error.

Changing Start, Failover, and Failback Modes for Printing

By default, OES Cluster Services sets the print cluster volume Start mode and Failover mode to Auto, and the Failback mode to Disable. If the print volume Start mode is set to Auto, iPrint automatically starts on a server when the cluster is first brought up. If the print volume Start mode is set to Manual, you must manually start printing on a server, instead of having it automatically start when servers in the cluster are brought up.

If the print volume Failover mode is set to Auto, iPrint automatically starts on the next server in the Assigned Nodes list if there is a hardware or software failure. If the print volume Failover mode is set to Manual, you can intervene after a failure occurs and before iPrint is moved to another node.

If the print volume Failback mode is set to Disable, iPrint does not fail back to its most preferred node when the most preferred node rejoins the cluster. If the print volume Failback mode is set to Auto, iPrint automatically fails back to its most preferred node when the most preferred node rejoins the cluster. Generally, you want a failback to a preferred node to occur after business hours. You can set the print volume Failback mode to Manual to prevent iPrint from moving back to its preferred node when that node is brought back online, until you are ready to allow it to happen.

IMPORTANT: We recommend that you use the default settings for Start, Failover, and Failback modes.

To view or change the print volume's Start, Failover, and Failback modes:

1. In iManager, click **Clusters** > **My Clusters**, then select the cluster.

   If the cluster does not appear in your personalized list of clusters to manage, you can add it. Click Add, browse and select the cluster, then click OK. Wait for the cluster to appear in the list and report its status, then select the cluster.
2. Select the Cluster Options tab.
3. Click the print volume resource object, then select **Properties**.
4. Browse to and select the cluster you want to manage.

5 Select the Print Cluster object you want to modify, then click **Properties**.

The Failover and Failback modes are displayed.

Troubleshooting iPrint in a Cluster

Use the following sections to troubleshoot common issues when clustering iPrint:

- “Error Code 506D0203” on page 108
- “iPrint Web Pages Are Displayed on One Node Only” on page 108

Error Code 506D0203

If you receive error 506D0203 and the Print Manager fails to load, ensure that you are loading iPrint on a Linux POSIX file system such as ext3.

iPrint Web Pages Are Displayed on One Node Only

Ensure that the Print Manager is using the secondary IP address for the iPrint resources in `/etc/opt/novell/iprint/conf/ipsmd.conf`. If the Print Manager was created with the node IP address, then iPrint works only on that node.

10 Managing Your Print System

- "Using Web-Based Enterprise Management" on page 109
- "Understanding and Managing Certificates" on page 109
- "Managing the Print Manager" on page 110
- "Managing Printers" on page 124
- "Managing the Driver Store" on page 135
- "Configuring LDAP" on page 138
- "Auto Clearing a Printer Queue" on page 139

To manage your print system, use OES iManager. The iPrint plug-in for iManager works with workstations running Mozilla-based browsers or Internet Explorer 5.5 with Service Pack 2 or later. For a review of supported browsers, see Appendix A, "Supported Browsers for iPrint," on page 157.

- To manage iPrint running on Linux, you must access iManager installed on a Linux server. To manage iPrint on NetWare, you must access iManager installed on a NetWare server.
- You cannot administer iPrint from iManager installed on a Windows, Solaris, or HP-UX server platform.
- You cannot administer iPrint from a Macintosh computer.

For more information iManager, see the *NetIQ® iManager Administration Guide*

Using Web-Based Enterprise Management

This release includes a Web-Based Enterprise Management (WBEM) system for the core iPrint components. You can use the iPrint WBEM `iprntman` command in scripts or at a console prompt to create, modify, and manage Print Managers, Printers, Driver Stores, and print jobs. For more information on using `iprntman`, see the iprintman manpage.

Understanding and Managing Certificates

When you manage Print Managers, driver stores, and printers that are running on a different server than the server running iManager, you might receive a certificate error, meaning that the host name or IP address of the server where you are managing the print object does not match any of the certificates on the server where iManager is running.

To find and accept the correct certificate:

1. Click the **iPrint Certificate Manager** link in the error.
2. Review the certificate information for accuracy.
3. Select the action you want to perform for this certificate.

   In order to manage the print object, you must accept the certificate.

4 Click **OK**.

You might need to scroll down in order to click **OK** to accept the certificate.

5 Restart your task.

Certificates are accepted on a per-user basis.

You can remove accepted certificates by deleting the certstore folder located at: `/var/opt/novell/iManager/nps/portal/modules/iPrintX/certstore`. Deleting this folder removes all accepted certificates.

Managing the Print Manager

Although the default settings let users print without additional configuration, you probably want to modify some of those settings so that you can manage your printing resources most effectively.

NOTE: Printer driver profiles are stored in the Print Manager database file (psmdb.dat). While the `.dat` file can be viewed only using iManager and the /psmstatus page, a text copy of the database file can be viewed using many tools (including text editor, web browser, and others). This text copy is periodically backed up in the same directory as the `.dat` file, but in XML format. The directory location is: `/var/opt/novell/iprint/<print manager name.ou.ou.o>.psm/`.

- "Understanding the Print Manager Database" on page 110
- "Understanding the Print Manager Configuration File" on page 111
- "Changing the eDirectory Server Assignment" on page 111
- "Using the Print Manager Health Monitor" on page 111
- "Setting Up a Printer Pool" on page 114
- "Using Print Auditing" on page 115
- "Creating Additional Print Managers" on page 119
- "Loading or Unloading the Print Manager" on page 120
- "Moving Print Managers to Another Linux Server" on page 121
- "Auto Driver/Profile Update" on page 121
- "Enabling Printer Agent Redirection" on page 122

Understanding the Print Manager Database

The Print Manager uses a database to store information about the printers it controls. The database creates a backup when you create or delete a printer and also every night at midnight.

NOTE: Although database creation is a quick process, sometimes the backup is delayed because of other tasks the Print Manager is doing. You might need to wait a short while after you create or delete a printer before a backup is generated and uploaded to eDirectory.

The last four backups are saved. When a new backup file is created, the oldest of the four stored files is deleted. If the oldest backup file is older than four days, then the Print Manager creates a new backup.

If the database fails to load through normal mechanisms, you can use the following procedure to access the backup database:

1. Rename `/var/opt/novell/iprint/<PSM_Name>/psmdb.*` to `psmdbold.*`.
2. Rename `/var/opt/novell/iprint/<PSM_Name>/psmdbsav.*` to `psmdb.*`.
3. Start the Print Manager.

Understanding the Print Manager Configuration File

When you create a Print Manager, a configuration file is created in `/etc/opt/novell/iprint/conf`. The file name is *`print_manager_name`*`.context.ipsmd.conf`. A separate file is created for each Print Manager that is created and assigned to run on the same server. Only one Print Manager can run on the server at a time. For information about the entries in the configuration file, see `/etc/opt/novell/iprint/conf/ipsmd-template.conf`.

The `ipsmd.conf` file links to the configuration file of the currently loaded Print Manager.

To load a different Print Manager on the server, use the **iPrint> Manage Print Manager** > **Manager Control** page in iManager. If you attempt to load a Print Manager when one is already running, you receive an error message instructing you to unload the current Print Manager before loading the new one.

Changing the eDirectory Server Assignment

If you need to change the eDirectory server assignment for the Print Manager or Driver Store, edit the Directory Services Server1= entry in the corresponding configuration file, *`print_manager_name`*`.context.ipsmd.conf` or `idsd.conf`, located in `/etc/opt/novell/iprint/conf`.

NOTE: As many as two additional servers can be specified, using Directory Services Server2 and Directory Services Server3. Directory Services Server1 is considered to be the primary eDirectory server. Directory Services Server2 and Directory Services Server3 are considered to be secondary servers.

Using the Print Manager Health Monitor

The Print Manager Health Monitor provides you with a global view of your print system. The Health Monitor shows you the current status of the Print Manager and the associated printers and lets you configure error threshold, customize some print system settings, and generate reports about your system.

- "Understanding the Print Manager Health Monitor" on page 112
- "Accessing the Print Manager Health Monitor" on page 112
- "Generating Reports" on page 112
- "Configuring Health Monitor Settings" on page 113
- "Posting Administrator Messages about a Printer" on page 114

Understanding the Print Manager Health Monitor

The Print Manager Health Monitor is a powerful tool for managing and troubleshooting your print system.

The opening page of the Health Monitor shows all of your printers; their current state; and general statistics including the number of print jobs printed in the last hour, in the last day, and since the Print Manager was last started.

A quick look at these statistics helps you identify which printers are not printing because of errors or which printers are not being used. You can click a printer name to see additional details about the printer that can help you troubleshoot a reported printer error and why users are not using the printer.

For example, if the printer status shows `Error printing`, click the printer for a list of known problems. If one of the known problems is `Printer not connected`, use the IP address listed in the **Load String** field to ping the printer to determine if the IP address is valid.

By looking at the statistical information, you can correct printer problems or make decisions about redeploying underused printers to departments that print a lot. For more information, see "An Overview of the iPrint Manager Health Monitor".

Accessing the Print Manager Health Monitor

Access the Health Monitor by going to http://*server_address*/psmstatus, where *server_address* is the IP address or DNS name of the server where the Print Manager is running.

For example: http://printing.my_company.com/psmstatus.

You can view current Printer Agent states, start up and shut down Printer Agents, and other information about your print system.

Generating Reports

The report feature of the Health Monitor allows you to generate a report that can be displayed on the page or saved as a comma-separated-value (`.csv`) file that can be used in a spreadsheet program.

1. On the Print Manager Health Monitor main page, click **Advanced Print Manager Information** > **Generate Report**.
2. (Optional) To save the report as a file, click **Write Results to File** under the **File Options** heading.

   The heading specifies the location and filename of the report.
3. Select the information you want included in the report by selecting the corresponding check boxes.
4. Click **Generate Report**.

   The report is displayed on the screen, even if you selected to save the report to a file.

The following common reports are available for you to generate:

Printer Configurations: To determine what features are enabled for each Printer Agent, generate the following reports:

- SSL Required for iPrint Access
- Auditing Enabled

Printer's Current State: To view the states of the printers and any printer console messages, generate the following reports:

- Printer Agent Status
- Printer Agent State Reasons
- Printer Console

Printing Statistics: To view statistics about your print system, generate the following reports:

- Jobs Printed Ever
- Jobs Printed Since Load
- Jobs Printed Today
- Average Job Size Since Load
- Average Job Size Today

Gateway Information: To view information about a gateway associated with the Printer Agents, including the gateway's IP address, generate the following report:

- Gateway Load String

Printer Driver Associations: To view the printer drivers associated with each printer, generate the driver reports for the platforms listed.

Printer and Printer Agent Associations: Because a Printer Agent can service more than one printer, use the **Associated NDS Printers** option to view the number of printers serviced by each Printer Agent.

Configuring Health Monitor Settings

You can configure settings in the Health Monitor to control how the Health Monitor presents information when certain thresholds are met.

1. On the Print Manager Health Monitor main page, click **Advanced iPrint Manager Information** > **Configure Settings and Error Thresholds**.
2. Adjust the settings you want to change.

   See the online help for information about the available settings. For most print systems, the default settings are sufficient.

Posting Administrator Messages about a Printer

Suppose a printer has been taken offline and sent for repairs, but you keep getting phone calls from other administrators that the printer has an error in the Health Monitor. This can be resolved by leaving a message about the printer in Health Monitor. Users can see the message, but only administrators can edit it.

1. On the Print Manager Health Monitor main page, click the printer you want, then click **Message from Admin**.
2. Type the text you want displayed for this printer.
3. Click **Apply**.

To remove a message, follow the steps above and delete the text in the message box (Step 2).

Setting Up a Printer Pool

You can create a pool of printers to share the load of printing. Users install one of the printers in the pool. When a printer in the pool has a print job waiting, the Print Manager can redirect that print job to an idle printer in the pool. The Print Manager attempts to evenly distribute print jobs among all printers in a pool.

For example, if four printers are in the pool and the first printer is printing a 100-page job, then the next print job is sent to the second printer. If the second printer completes the print job and the first printer is still busy, the next print job is sent to the third printer to distribute print jobs throughout the pool. Printer pools are specific to the Print Manager, and a printer pool cannot span multiple Print Managers.

Printers that are included in a pool should be the same model and use the same printer drivers. You can include only printers from the same Print Manager in a pool.

When you create a printer pool, the pool information resides in the Print Manager and can be viewed only using iManager. Unlike the printers and the Print Manager, a separate eDirectory object for a printer pool is not created.

After you set up a printer pool, users install only one of the printers in the pool on their workstation. When a user submits a print job to the installed printer, the Print Manager uses the method described in the example above to send the print job to the next available printer in the pool. Users should be reminded that their print jobs might be printed by any printer in the pool. For this reason, the physical printers that are members of a printer pool should be located close to one another. You might also want to enable banner pages, depending on the type of documents being printed.

To configure a printer pool, do the following:

1. In iManager, click **iPrint** > **Printer Pool Configuration**.
2. Select the Print Manager for this pool.
3. Select **Create Pool** from the **Select Operation** list, then click **OK**.
4. Specify the name of the printer pool.

   This name is used to identify the pool only within iManager.
5. Select the printers you want included in the pool.
6. Click **Next**, then click **OK**.

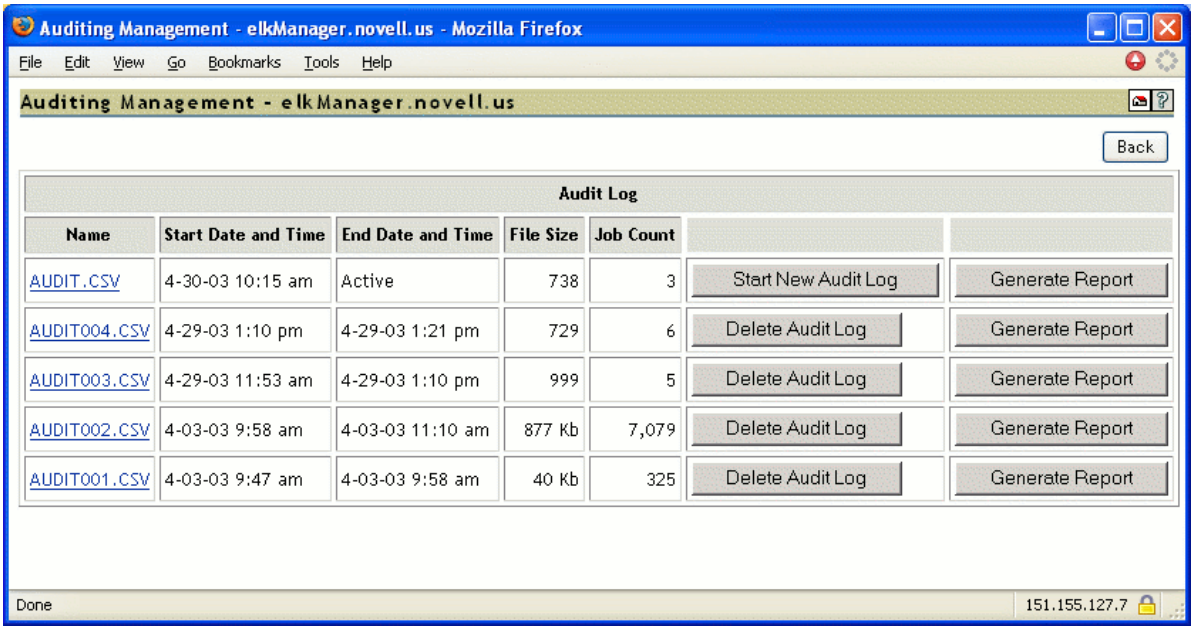
To modify or delete a pool, follow the above steps and select the desired action from the Select an Operation list in Step 3.

Using Print Auditing

To use print auditing, you first need to enable auditing for *each* printer you want to audit using iManager or the Print Manager Health Monitor.

When auditing is enabled for a Printer Agent, a log file is created indicating who printed how many pages to which printer on a given date. The log file is in a comma-separated format (.csv). The data from this log file can be viewed from the Health Monitor or downloaded into a spreadsheet.

Figure 10-1 *Auditing Management Page*



From the Auditing Management page, you can complete the following tasks:

- "Using iManager to Enable Auditing" on page 115
- "Using the Health Monitor to Enable Auditing" on page 116
- "Viewing Auditing Information" on page 116
- "Managing Audit Logs" on page 118
- "Configuring Automatic Log Rotation" on page 118
- "Downloading an Audit Report" on page 119

Using iManager to Enable Auditing

1. In iManager, click **iPrint** > **Manage Printer**.
2. Browse to and select the printer you want to enable auditing for.
3. Click **Configuration** > **Auditing**.
4. Select the **Enable Auditing** check box.

Using the Health Monitor to Enable Auditing

1 To access the Print Manager Health Monitor, open http://*server_IP_address*/psmstatus in a web browser.

For example: http://printing.my_company.com/psmstatus.

2 Select a printer, then click **Configuration Options**.

You can also access Configuration Options by going to https://*server_IP_address*/PsmStatus/configOpt/*Printer_Name*.

3 Select the **Enable Auditing** check box.

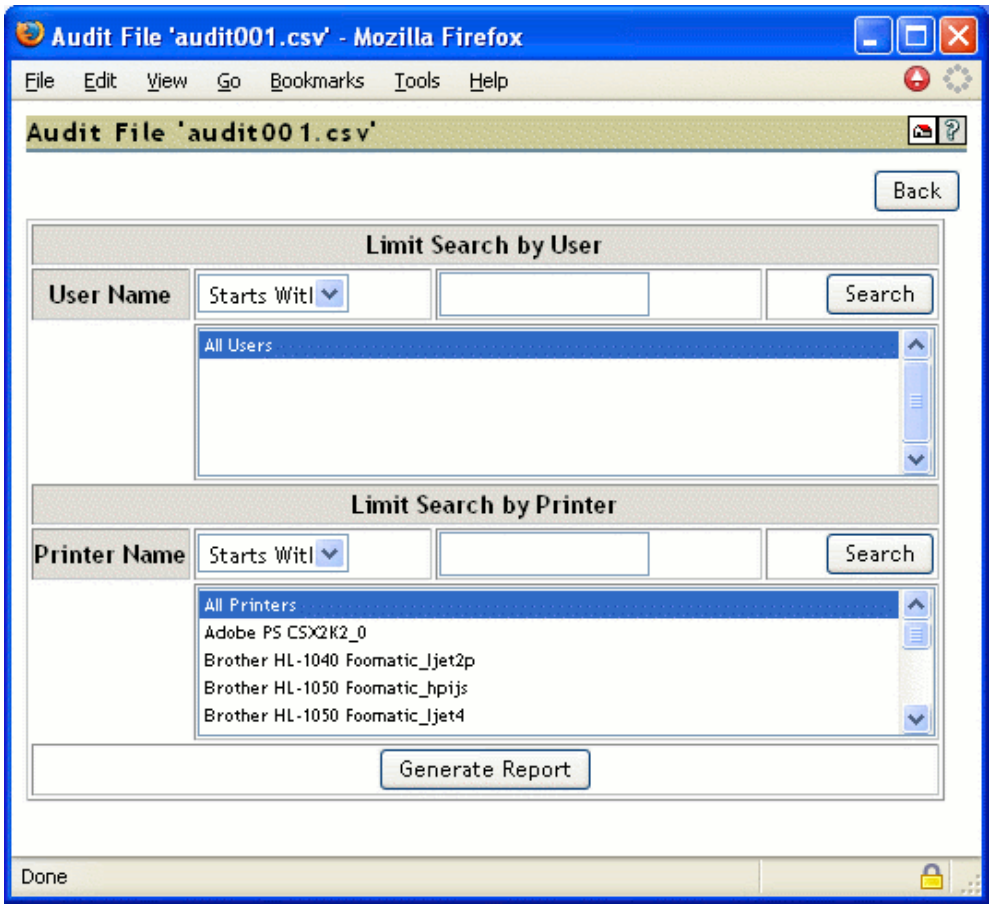
Viewing Auditing Information

You can generate an audit report that shows all print jobs, or you can filter the report based on a user or a printer or both.

1 In the Print Manager Health Monitor, click **Advanced iPrint Manager Information** > **Auditing** > **Generate Report**.

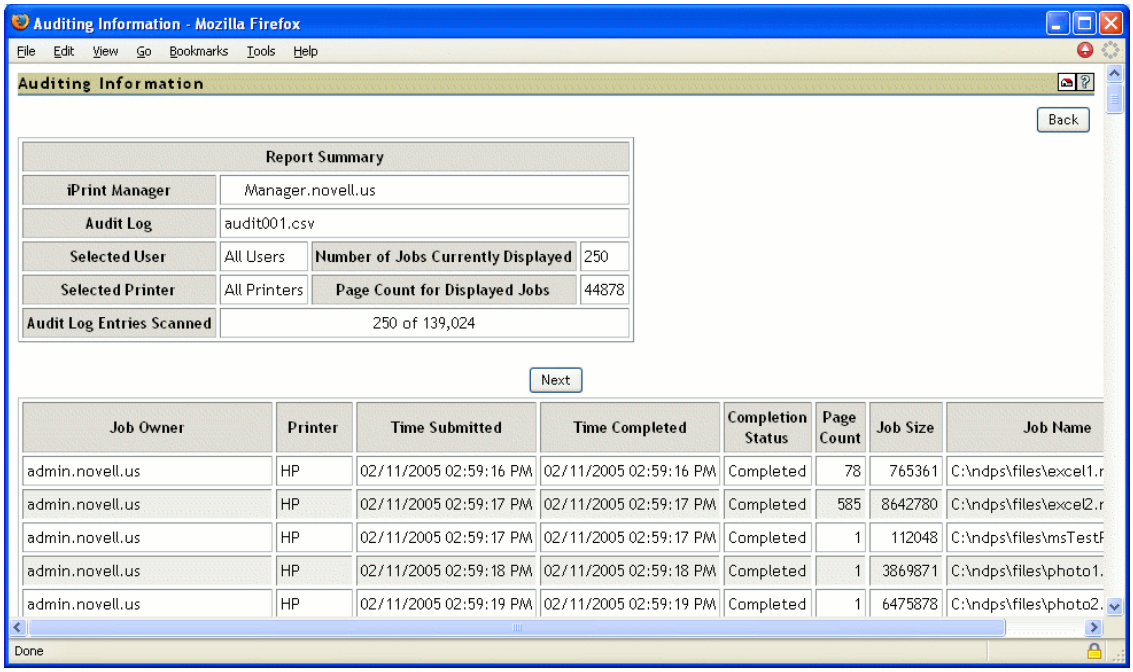
If there is more than one audit log, click **Generate Report** for the audit log you want to view.

2 (Optional) Filter the search by using the **Limit Search by User** or **Limit Search by Printer** filters.



3 Click **Generate Report** to view the report with the specified filters.

There are only 250 print jobs listed at a time. To view more print jobs in the report, click **Next**.



The following table explains the fields that are displayed under the Report Summary.

Field	Description
iPrint Manger	The Print Manager that the information is from.
Audit Log	The audit log filename that was used to create the report.
Selected User	Any user filter criteria that were used to create the report.
Selected Printer	Any printer filter criteria that were used to create the report.
Number of Jobs Currently Displayed	The number of jobs submitted by the indicated users and printers.

The following table discusses what is displayed in the body of the report.

Field	Description
Job Owner	The owner of the print job.
Printer	The printer the print job was sent to.
Time Submitted	The time the print job was submitted to the printer.
Time Completed	The time the print job was printed on the printer.
Completion Status	The completion status of the submitted print job: Completed, Cancelled by User, Cancelled by Operator, or Other (Other usually indicates the job was aborted by the system).
Page Count	The number of pages printed.
Job Size	The size of the print job (in bytes).
Job Name	The print job filename that was submitted and the type of print client that submitted the print job.

Managing Audit Logs

You can manage your audit logs by using the buttons on the Auditing Management page. When audit logs are no longer needed, you can manually delete them. To automatically save and create new logs, see "Configuring Automatic Log Rotation" on page 118.

The active audit log file (audit.csv) logs data for all printers that have been enabled for auditing. You can generate a report from this file or you can move the data to a saved file by using the **Start New Audit Log** option. You cannot download the `audit.csv` file. To download a file, it must be saved as a separate audit log. When you move the data to a saved audit log by using the **Start New Audit Log** button, the log file is named `audit`*xxx*`.csv`, where *xxx* is the next sequential number of the log. After a log file is saved, you can download the file to your workstation and import it into a spreadsheet program.

Configuring Automatic Log Rotation

Audit Log Rotation automatically creates a new log when certain criteria are met.

1. In the Print Manager Health Monitor, click **Advanced iPrint Manager Information** > **Auditing** > **Configure Log Rotation**.
2. Select **Enable Audit Log Rotation**.
3. Specify the number of logs to keep.

   When the number of logs to keep is reached, the oldest log is deleted when the next log is created. When setting this number, take in to account the criteria you are using to create new log files. If you want a year's worth of logs, set the number of audit logs to keep to 12 and then select the **By Date** and **By Month** options.
4. Specify the criteria used for log rotation:

   By Job Count: Specify the maximum number of print jobs that an audit log can contain before a new log is created.

By Date: Select when you want the audit logs to rotate.

- **Day:** The log rotates each day at midnight.
- **Week:** The log rotates each Sunday. If the Print Manager is not loaded on Sunday, the log is rotated the next time the Print Manager starts.
- **Month:** The log rotates at midnight on the first day of the month.

NOTE: If you select Day or Week, ensure that the **Maximum Number of Audit Logs to Keep** entry is large enough so that logs are not rotated before you need the data.

By File Size: Specify the maximum file size (in KB) before a new log is created. The maximum file size is 4194304 KB.

Downloading an Audit Report

When the file is downloaded, you can open the report in a spreadsheet application to sort, view, and format the data to meet your needs. The active audit log, `audit.csv`, cannot be downloaded. You must first start a new audit log by clicking the **Start New Audit Log** option, then download the newly created audit log.

1. On the Print Manager Health Monitor main page, click **Advanced iPrint Manager Information** > **Auditing**.
2. Right-click the name of the audit log you want to download, then click **Save Target As**.
3. Follow the prompts and save the file to the desired location.

Creating Additional Print Managers

A Print Manager must be created and running before you can create and associate printers. A Print Manager provides a platform for Printer Agents, which are logical representations of printers that reside on the server. You can manually load Print Managers on a server.

Use the following guidelines to determine where and when to place a Print Manager:

- Only one Print Manager can be running on a server.
- For optimal performance, place the Print Manager and the printers it controls on the same LAN segment.
- Consider distributing your printers across multiple Print Managers so that if one manager goes down, not all of the Printer Agents are affected.

You need the Supervisor right for the container where the Print Manager object is to reside.

1. In iManager, click **iPrint** > **Create Print Manager**.
2. Specify the Print Manager name for the iPrint Manager object.
3. Specify the container name where you want the Manager's object to reside.
4. Specify an eDirectory server you want the iPrint Manager to communicate with.

   For fault tolerance, you can specify more than one eDirectory server from the same tree. For more information, see “Changing the eDirectory Server Assignment” on page 111.
5. Specify the Driver Store name.
6. Select the **Start print manager after creation** check box.

If you do not select the **Start print manager after creation** check box, you should start the Print Manager. You can start the Print Manager by using **Manage Print Manager** > **Manager Control** in iManager or by entering `systemctl start novell-ipsmd.service` at a command prompt.

IMPORTANT: In a cluster setup, do not select the **Start print manager after creation** check box.

7 Click **OK**.

After the Print Manager is created, the daemon is loaded on the server.

To modify the Print Manager properties, click **Manage Print Manager**, then select the manager you want to modify.

For information about Access Control roles, see "Setting Access Control for Your Print System" on page 141.

Loading or Unloading the Print Manager

You can start and stop the Print Manager in two ways:

- "Using the Command Line" on page 120
- "Using iManager" on page 121

Using the Command Line

The Print Manager uses systemctl scripts for starting and stopping the daemon. To load the Print Manager from the command line, enter `systemctl start novell-ipsmd.service`.

The following systemctl script actions are also valid:

Table 10-1 *Print Manager Actions*

Action	Description
start	Starts the daemon.
stop	Stops the daemon.
reload or force-reload	Stops and then starts the daemon.
restart	Restarts the daemon.
try-restart	Tries restarting the daemon.
status	Displays the status of the daemon and the name of the Print Manager.

Using iManager

On the Manager Control Property page, you can view the Print Manager's status and unload or load the manager daemon.

1. In iManager, click **iPrint** > **Manage Print Manager**.
2. Browse to and select the Print Manager you want to control.
3. Click **Manager Control** > **Shutdown** to stop Print Manager.
4. Click **OK**.

Moving Print Managers to Another Linux Server

Sometimes it is necessary to move the Print Manager from one server to another. If you assigned a DNS name to the Print Manager, you should update the DNS entry with the new IP address that the Manager is running on when the move is completed; otherwise, you cannot manage the Print Manager and users are cannot print.

IMPORTANT: The URLs generated by iPrint are based on the server's IP address or a DNS name. If you move a Print Manager to a server that has a different IP address or a different DNS name than is currently being used, a new URL is generated for each printer. Users must delete and reinstall their iPrint printers. If you are using NDPS Printers, printing is not affected.

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1. In iManager, click **iPrint** > **Manage Print Manager**.
2. Browse to and select the Print Manager you want to move, then click **OK**.
3. Click **Shutdown**.

   IMPORTANT: All printing associated with this Print Manager ceases and waiting print jobs are lost.

   ---
4. On the Manager Control page, click **Move**.
5. Fill in the fields:

   Target Server: Specify the DNS name or IP address for the server that is to host the Print Manager. For example, 192.0.34.166 or print.my_company.com.

   iPrint Service Name: Displays the IP address or DNS name for the iPrint service.

   eDir Server: Specify an eDirectory server that you want the Print Manager to communicate with.

   If you are using a DNS name, you must update your DNS host tables to reflect the move.
6. Click **OK** to move the Print Manager.

   The Print Manager is moved and loaded on the destination server.

Auto Driver/Profile Update

An auto driver/profile update allows you to automatically update the client with the latest drivers and the modified profiles available on the server, without users needing to manually update the driver or profile. If you make any changes to the driver in the Driver Store or modify the profile, the client is prompted for the changes and the client is updated.

NOTE: The client might take few seconds to 24 hours to reflect the changes.

To enable the auto driver/profile update:

1. Upload the updated driver.

   For more information on how to upload the driver, see "Creating a Driver Store" on page 28.

2. Create or modify the profile.

   For more information on how to create the profile, see "Using Printer Driver Profiles" on page 125.

3. Enable the auto driver/profile update:

   3a. In iManager, click **iPrint** > **Manage Print Manager**.

   3b. Browse to and select the Print Manager for which you want to enable the auto driver/profile update.

   3c. Click *Printer Agents*.

   3d. Select the *Auto driver/profile update* for the Printer Agents for which you want to enable auto driver/profile update.

   3e. Click *OK*.

Enabling Printer Agent Redirection

Printer Agent Redirection is useful when you are decommissioning an iPrint printer and want to automatically redirect printing to a different iPrint printer without users manually deleting and reinstalling the printer. Redirection can continue even after you delete the printer agent for iPrint printers only.

Printer Agent Redirection is supported with the iPrint client for Windows v4.26 or later.

With Printer Agent Redirection enabled by entering a Printer Redirect URL, the client attempts to access the printer and is then redirected to the new printer. The client verifies that it can access the new printer before deleting the installed printer and installing the new printer.

Before implementing Printer Agent Redirection, you should be aware of the following:

- When you redirect a Printer Agent, the iPrint Printer List Web page is automatically updated to install the redirected printer. This means when a user clicks to install a printer listed from the list page, the link has been updated to install the redirected printer.

  For example, you redirect a Printer Agent that has the name of Printer_1_Color to a printer called Color_Printer. On the iPrint Printer List Web page, the user sees and clicks Printer_1_Color. After the printer is installed, the printer listed in the Windows Printer Folder is Color_Printer.

- Printers on maps are not automatically redirected. If you are using maps and you redirect the Printer Agent, you need to also update your map and republish it to show the newer Printer Agent. You should update the map before enabling Printer Agent Redirection because as soon as you enter a redirection URL, the link on the map is broken and any user clicking the link in the map receives an error.

- If you redirect a Printer Agent to another printer that is also being redirected, the iPrint client attempts to install the final destination printer; however, this might cause undesired results.

For example, if you have redirected Printer_1_Color to Color_Printer, and then redirect Printer_A to Printer_1_Color, the iPrint client attempts to install Color_Printer for Printer_A.

- You should enable Printer Agent Redirection before deleting a printer; otherwise, when the client accesses the Print Manager and cannot find the associated Printer Agent for an installed printer, the installed printer is deleted.

IMPORTANT: If you are using iPrint Client Management, you should not use Printer Agent Redirection. Using Printer Agent Redirection for printers being used by iPrint Client Management can cause undesired results.

Instead, you should update iPrint Client Management with the desired printers.

Managing Printer Agent Redirection

Before deleting Printer Agents from a Print Manager, you should enable Printer Agent Redirection for iPrint printers by entering another printer URL. By adding the URL before deleting the printer, workstations can update to the newest printer.

The Printer Agent Redirection lists includes NDPS and iPrint printers. If you enable redirection for NDPS printers, then install the iPrint client on the workstations and edit the UpgradeNDPSPrinter= entry in the `iprint.ini` file, NDPS printers can be upgraded. However, if you delete an NDPS Printer Agent, redirection is discontinued.

NOTE: By default, the iprint.ini file is located at: /var/opt/novell/iprint/htdocs/iprint.ini. In case of NSS volumes for Cluster environments, the file is located at: /media/nss/NSSVOL1/var/opt/novell/iprint/htdocs/iprint.ini.

---

1. In iManager, click **iPrint** > **Manage Print Manager**.
2. Browse to and select a Print Manager.
3. Click **Printer Agent Redirection**.
4. For each Printer Agent you want to redirect, use the browse button to select the Printer object in eDirectory to ensure that you use the correct URL.

   If the printer resides in a different tree, you can manually enter the URL in the following format: ipp://*server*/ipp/*pa_name* where *server* is the IP address or DNS name of the server and *pa_name* is the Printer Agent.
5. Click **Apply**.

   Each URL is validated to ensure that the format is valid and that the Printer Agent is available. An error is displayed when the URL cannot be validated.

Managing Deleted Printer Agent Redirection

Each time a Printer Agent is deleted, it is moved to the Deleted Printer Agent Redirection list. Periodically, you should review this page and delete printers that are no longer being accessed or printers where redirection was not enabled.

1. In iManager, click **iPrint** > **Manage Print Manager**.
2. Browse to and select a Print Manager.

3 Click **Printer Agent Redirection > Deleted Printer Agent Redirection**.

4 Select the Printer Agents to delete.

Use **Printer Last Accessed Time** and **Printer Deleted Time** to determine if users are still attempting to access a specific printer and if sufficient time has passed that you can delete Printer Agents from the list.

5 Click **Apply**.

Each URL is validated to ensure the format is valid and that the Printer Agent is available. An error is displayed when the URL cannot be validated.

Managing Printers

Although the default settings let users print without additional configuration, you might want to modify some of those settings so that you can manage your printing resources most effectively.

- "Creating Additional Printers" on page 124
- "Deleting Printers" on page 125
- "Managing Printer Agents" on page 125
- "Using Printer Driver Profiles" on page 125
- "Enabling iPrint Direct" on page 128
- "Managing Print Jobs" on page 129
- "Using Printer Banner Pages" on page 130
- "Modifying the Printer's Gateway Load Commands" on page 132
- "Configuring LPR Printers" on page 134
- "Configuring Job Holds" on page 135

Creating Additional Printers

Before creating additional printers, ensure that you meet the following prerequisites:

- ❒ Have the Supervisor right for the destination container where its associated Printer object is to reside.
- ❒ Be designated as a manager of the Print Manager that controls this printer.
- ❒ Have a Driver Store running.
- ❒ Have a Print Manager running.

To create additional printers:

1 In iManager, click **iPrint** > **Create Printer**.

2 Fill in the fields.

Click **Help** for explanations about the fields.

3 Click **OK**.

4 Click **Next**, then select the drivers for this printer.

If the printer drivers for this printer are not listed, you can still create the printer. After the printer is created, you can add the printer drivers to the Driver Store and then associate the drivers to the printer by clicking **Manage Printer** > **Drivers**.

These drivers are automatically downloaded to users' workstations when they install the printer in the future.

Because the list of printer drivers included with this product is limited, you can add drivers to the Driver Store. See "Updating Printer Drivers" on page 137 for more information.

If you do not select a driver, users are prompted to provide a disk with the appropriate driver the first time they install this printer on their workstations.

5 Click **Next** to create the printer.

Deleting Printers

You use iManager to delete existing Printer Agents. Before deleting a Printer Agent, ensure that the agent is no longer being used by running an report on the printer or by using Printer Agent Redirection to redirect the printer for a period of time before deleting it.

WARNING: Deleting a printer permanently removes the printer from the Print Manager. You cannot use Printer Agent Redirection. The printer is automatically removed from workstations the next time the workstation communicates with the Print manager.

---

1 In iManager, click **iPrint** > **Delete Print Object**.

2 Browse to and select the objects you want to delete.

3 Click **OK**.

Managing Printer Agents

You use iManager to manage Printer Agents. You can start up and shut down a Printer Agent, pause and resume input and output, view printer information, set configuration settings, and change the printer drivers.

1 In iManager, click **iPrint** > **Manage Printer**.

2 Browse to and select the printer you want to manage.

3 Use the tabbed property pages to complete the task you want.

Using Printer Driver Profiles

A printer driver profile allows you to set the driver defaults for a Windows printer driver. When you associate the printer driver profile to a printer, the printer is installed and configured with your defined settings. For example, in a law office you might want the default paper size to be legal size. This means that every time the printer and its corresponding driver is installed on a workstation, the paper size is set to legal size.

When creating a printer driver profile, you work directly with a platform-specific printer driver; so you should create and modify profiles from the same operating-specific platform as the printer driver. For example, to create or modify a Windows 2000 printer driver profile, you must access iManager and complete the task from a Windows 2000 workstation.

Use the Bi-Directional driver option to enable the selected printer driver to communicate with the printer. Bi-Directional communication allows the driver to communicate with the printer and discover its capabilities. This enables you to create more detailed profiles. Bi-Directional drivers communicate with the printer during profile creation. If your printer is not reachable from the client during profile creation, only basic profiles are created. When you create a profile for Bi-Directional drivers, you must provide a Printer Agent.

Use the Universal Printer Driver (UPD) model to simplify the task of managing the vast array of printer makes and models. This model allows the printer vendor to create a single printer driver that works with most of the printer and multifunction devices that the vendor manufactures. With this innovation, the Administrator/User no longer needs to install a unique driver for each and every printer model, but uses one driver to communicate with their devices.

Installing the UPD on the iPrint server (NetWare or Linux) is the same as installing individual drivers. Use iManager to upload the driver to the Broker or Driver Store and then assign this driver to the printers. You should use the latest iManager and also the latest support packs/updates for the iPrint server. Updates include printer driver profile updates, and enhancements for bidirectional communications, which are necessary for UPD function and printer driver profile creation. For more information, see "OES iPrint Universal Printer Driver Support" (http://www.novell.com/products/openenterpriseserver/pdfs/iprint_upd_environment.pdf).

You can create, copy, delete, and modify the printer driver profiles.

- "Creating a Printer Driver Profile" on page 126
- "Modifying a Printer Driver Profile" on page 127
- "Copying a Printer Driver Profile" on page 127
- "Deleting a Printer Driver Profile" on page 128
- "Associating a Printer Driver Profile with a Printer" on page 128

Creating a Printer Driver Profile

1. In iManager, click **iPrint** > **Printer Driver Profile**.
2. Browse to and select the Print Manager where you want the driver profile to be stored and made available to the printers on that manager.
3. From the **Select operation** drop-down menu list, select *Create Printer Driver Profile* and click *OK*.
4. In the Create driver profile window, perform the following tasks:
   - **4a** Specify the Driver Profile name.

     You can create a new driver profile or you can use the existing driver profile.
   - **4b** To create a new driver profile, select *Create new driver profile* and then select the driver for new profile from the list.
   - **4c** To use the existing driver profile, select *Create using existing driver profile* and then select the driver profile from the list of existing driver profiles.

     The associated printer model of the selected driver profile is displayed.
   - **4d** To enable printer communication, select the *Requires printer communication* check box.
   - **4e** Specify the name of the existing Printer Agent in the *iPrint Printer name* field. The driver profile is created and associated with the printer model.

NOTE: Ensure that your printer is reachable from the client during profile creation, or only basic profiles are created.

4f Click *Next*.

The Loading Driver Configuration window appears and shows the progress.

4g When the driver profile is loaded, the Save Driver Profile page is displayed. Click *Next*.

The complete page opens.

4h Click *OK*.

The driver profile is created.

After creating a printer driver profile, you must associate it with a printer. For information on associating the driver profile, see "Associating a Printer Driver Profile with a Printer" on page 128.

Modifying a Printer Driver Profile

1. In iManager, click **iPrint** > **Printer Driver Profile**.
2. Browse to and select the Print Manager where you want the driver profile to be stored and made available to the printers on that manager.
3. From the **Select operation** list, select *Modify Printer Driver Profile* and click *OK*.
4. Select the *Driver Profile* that you want to modify and click *Next*.

   You can select only one driver profile at a time for modification.
5. (Optional) Specify the name of the existing Printer Agent in the *iPrint Printer name* field and click *Next*.

   Ensure that the printer model matches the profile printer model.

   This option is displayed only if the printer model is displayed.

   The printer model is displayed if you have selected **Requires printer communication** when creating the printer driver profile.

   The Loading Driver Configuration window is displayed to indicate the progress.
6. When the driver configuration is completed, the Modify Driver Profile page is displayed. Click *Next*.

   The complete page is displayed.
7. Click *OK*.

   The driver profile is modified.

Copying a Printer Driver Profile

1. In iManager, click **iPrint** > **Printer Driver Profile**.
2. Browse to and select the Print Manager where you want the driver profile to be stored and made available to the printers on that manager.
3. From the Select operation drop-down list, select *Copy Printer Driver Profile*, then use the *Destination printer manager name* list to select the Printer Manager where you want to copy your driver profile. Click *OK*.

4 Select the *Driver Profiles* that you want to copy and click *Next*.

   The complete page is displayed.

5 Click *OK*.

   The driver profile is copied.

Deleting a Printer Driver Profile

1 In iManager, click **iPrint** > **Printer Driver Profile**.

2 Browse to and select the Print Manager where the driver profile that you want to delete is stored.

3 From the **Select operation** drop-down list, select *Delete Printer Driver Profile* and click *OK*.

4 Select the driver profiles that you want to delete and click *Next*.

   The complete page is displayed.

5 Click *OK*.

   The driver profile is deleted.

Associating a Printer Driver Profile with a Printer

1 In iManager, click **iPrint** > *Manage Printer*.

2 Browse to and select the printer you want to modify.

3 Click **Drivers** > *Drivers Platform*.

4 Select the printer driver from the list of available drivers.

5 Select the profile that you want to associate with this printer from the list of **Available Driver Profiles for Selected Driver**.

   If you do not want a profile to be associated, select **None**.

6 Click **OK** to save the changes.

Enabling iPrint Direct

A printer that is enabled for iPrint Direct sends print jobs directly to the printer instead of sending the job to the Print Manager first. A job is sent to the printer in LPR or raw 9100 format, depending on the setting in the gateway autoload command for the printer. Although this greatly reduces server communication, the ability to audit print jobs is lost. iPrint Direct supports direct banner printing (if the banner is already configured) and driver updates. The printer information is gathered directly from the printer by using SNMP.

NOTE: Direct Banner for iPrint Direct is supported only on Windows.

---

1 In iManager, click **iPrint** > **Manage Printer**.

2 Browse to and select the printer for which you want to enable iPrint Direct printing.

3 Click **Client Support** > **iPrint Direct**.

4 Select the **Enable iPrint Direct Printing** option.

5 Click **OK**.

NOTE: For detailed information on iPrint Direct, see *Technical Information Document (TID #7001343)* on the OES Support Site.

Managing Print Jobs

The following sections provide specific information about the print job management features. Users designated as managers or operators for a printer can perform these tasks for all jobs routed to that printer; individual job owners can perform these tasks only for their own print jobs.

- "Viewing Print Job Information" on page 129
- "Deleting Print Jobs" on page 129
- "Changing the Order of Print Jobs" on page 129

Viewing Print Job Information

You can view information about individual print jobs waiting to be processed by a specific printer.

1. In iManager, click **iPrint** > **Manage Printer**.
2. Browse to and select the printer the job was sent to.
3. Click **Printer Control** > **Jobs**.

   Information about print jobs is displayed.

Deleting Print Jobs

Administrators can delete any print job after it has been submitted if the job has not yet started printing. Users can delete only their own print jobs.

1. In iManager, click **iPrint** > **Manage Printer**.
2. Browse to and select the printer the job was sent to.
3. Click **Printer Control** > **Jobs**.
4. Select the check box next to the job you want to delete.
5. Click **Delete**.

Changing the Order of Print Jobs

Occasionally, you might need to print a job ahead of other jobs that have already been submitted to a printer but have not yet started printing. Administrators, managers, and operators can move any job up or down the list. Users can move only their own jobs, and can move them only down the list.

1. In iManager, click **iPrint** > **Manage Printer**.
2. Browse to and select the printer the job was sent to.
3. Click **Printer Control** > **Jobs**.
4. Select the check box next to the job you want to modify.
5. Click **Promote** to move a print job up the list.

Using Printer Banner Pages

Banner pages create a cover sheet for each print job that a printer produces. You use the Printer Banner Configuration task to customize the information printed on a banner to your needs. If you select to display eDirectory information such as the eDir e-mail address, the Print Manager needs rights to read these attributes. Follow the steps in "Using eDirectory Attributes with Custom Banners" on page 131.

- "Configuring a Custom Banner" on page 130
- "Associating a Custom Banner to a Printer" on page 130
- "Using eDirectory Attributes with Custom Banners" on page 131

Configuring a Custom Banner

1. In iManager, click **iPrint** > **Printer Banner Configuration**.
2. Browse to and select the Print Manager you want.
3. Select an operation and click **OK**.

   Create Custom Banner: Lets you create a new custom banner.

   Delete Custom Banner: Lets you delete an existing banner.

   Modify Custom Banner: Lets you edit the settings of an existing custom banner profile.
4. Complete the fields with the information you want. If you create multiple banners, you should use banner names that are descriptive enough to identify them when you associate the banner to a printer.
5. Select the **Banner Text Location**.

   This is where the banner option information appears on the banner page. The banner information is grouped together and then placed as a unit either starting at the top of the page, centered on the page, or starting at the bottom of the page.
6. Select the banner options you want and the font size you want to display the information.
7. Click **OK** to save the changes.

Associating a Custom Banner to a Printer

1. In iManager, click **iPrint** > **Printer Banner Configuration**.
2. Browse to and select the Print Manager where the Printer Agents are hosted.
3. Select **Assign Custom Banner**, then click **OK**.
4. From the **Custom Banner** drop-down list, select the banner you want.
5. Select the check box next to each printer you want this banner associated with.

   When you select the check box, the banner name appears in the **Assign Banner** field. To associate a different banner, select the desired banner from the **Custom Banner** drop-down list, and select the check box for the printer you want to change. If you do not want a banner to be used, select **None**.

You can also assign banners when you use the Manage Printer task.

1. In iManager, click **iPrint** > **Manage Printer**.
2. Browse to and select the printer you want to modify.
3. Click **Configuration** > **Custom Banners**.
4. In **Available Banners**, select the banner that you want this printer to use.
5. Click **OK** to save the changes.

   If you select to display eDirectory information such as the eDir e-mail address, the Print Manager needs rights to read these attributes. Follow the steps in "Using eDirectory Attributes with Custom Banners" on page 131.

Using eDirectory Attributes with Custom Banners

Custom banners lets you select the information you want displayed on the banner page. Some of the banner options use information contained in eDirectory. In order for the Print Manager to obtain this information, you must modify the trustee rights and give the Print Manager read rights to these properties. Because rights flow down the eDirectory tree, you can assign the trustee right at a container level above the users, or to the tree.

1. In iManager, click **Rights** > **Modify Trustees**.
2. Select the container or tree where you want to modify the rights.
3. Click **Add Trustee**, then select the Print Manager object.
4. Click **Add Property**, then select the **Show All Properties in Schema** check box.
5. Select the attributes that you want:

Banner Option	eDirectory Property
eDir mail stop	mailstop
eDir e-mail address	EMail Address
eDir location	L
eDir telephone number	Telephone Number
eDir user first name	Given Name
eDir user full name	Full Name
eDir user last name	Surname

6. Click **OK**.
7. Ensure that at least the Read right is selected.
8. Click **Done**.

NOTE: If your client, printer, and server are not all configured for the same language, you might experience problems with the output of your banner pages, such as the job name being corrupted. If you are working in this type of mixed environment, you should consider not using banner pages.

Modifying the Printer's Gateway Load Commands

1. In iManager, click **iPrint** > **Manage Printer**.
2. Browse to and select the printer you want to modify.
3. Click **Configuration** > **Gateway**.
4. Edit the gateway autoload command.

   The following table describe the gateway load commands and parameters that can be used.

Gateway Load Parameters	Description
IPRINTGW	The gateway executable that is loaded for the Printer Agent.
PA=	The name of the Printer Agent to be supported by this gateway instance.
PORT=	The port on the physical printer to be used for print job submission. Valid values are: **LPR:** Specifies the LPR print protocol and resolves to the standard LPR port - 515. **RAW:** Specifies the RAW print protocol and resolves to the default RAW port - 9100 unless the port number is specified separately in the load string. Port 91 can also be used instead of 9100. **Number:** The actual port number for the physical printer. **NODATA:** Specifies the LPR print protocol, but document data is not submitted to the physical printer. **NULL:** SNMP and ping are disabled for this gateway instance. Document data is not submitted to the physical printer.
STRICTLPR	Limits the port number on the gateway side of LPR communication to the standard LPR range of sockets (721 - 1020). This parameter is needed only for some older printers that enforce the range of ports specified by the original LPR specification for LPR clients.
HOSTADDRESS= HOSTNAME= HOST= IPADDRESS=	Any of these specifies the hostname / IP address for the physical printer to be supported by this gateway instance. **NOTE:** If the hostname / address value has :nn at the end of the value, the port number for the printer is derived from this value. However, the most common approach is to specify the port with the PORT= parameter.
PRINTERNAME= PRINTER=	The printer / queue name for LPR protocol print sessions to the physical printer. The default value is PASSTHROUGH.
USERNAME_CN	This parameter is needed when you want the user name submitted to the printer in CN format.

Gateway Load Parameters	Description
GETCOMMUNITYSTRING= GET=	Specifies the community string for SNMP requests. This is only needed when a printer has been configured with a community string that is different from the default string "public".
SQUERYACTIVE=	Specifies the interval between SNMP requests to the physical printer while the printer is idle. The default value is 300 seconds (5 minutes).
SPOLL=	Specifies the interval between SNMP requests to the physical printer while the printer is active or idle.
SETCOMMUNITYSTRING=	Sets the community string to be used for the SNMPGet and GetNext requests.
JPOLL=	Sets the job polling interval (in seconds). **NOTE:** When the JPOLL option is not set, the job polling interval is 2 seconds.
NOSNMP	Disables SNMP requests for this gateway instance to its respective physical printer.
WAITONPRINTER=	Specifies the number of minutes to timeout for communication to the physical printer. **NOTE:** For write attempts, this parameter is only effective if the value is greater than the minimum default timeout value. If SNMP is disabled by the NOSNMP or the NULL parameter, the minimum default is 15 minutes. If SNMP is active, the minimum default is 5 minutes.
THROTTLE=	Specifies a delay of nn seconds while establishing communication with the physical printer and between print jobs. This is primarily used for solving a problem where the end of a job is lost when submitting an LPR job to a windows system.
KYOCERA=	Sets the Printer Manufacturer (Make) attribute for this Printer Agent to "Kyocera".
RICOH=	Sets the Printer Manufacturer (Make) attribute for this Printer Agent to "Ricoh".
TROY=	This has no effect.

5 Click **OK** to save the changes.

Configuring LPR Printers

UNIX, Macintosh, and other LPR clients can print to iPrint printers through LPR.

IMPORTANT: In order for LPR to work, the Printer Agent name cannot contain spaces. If it does, you need to re-create the Printer Agent or select a different printer.

1. In iManager, click **iPrint** > **Manage Printer**.
2. Browse to and select the printer you want to enable LPR printing for.
3. Click **Client Support** > **LPR Support**.
4. Select the **Enable LPR/LPD Client Support** check box.

   The **LPR Host** and **LPR Printer/Queue** fields display information required when setting up printing for Macintosh, UNIX, or other LPR clients.

   LPR Host: The server name where the Print Manager is running.

   LPR Printer/Queue: The same as the Printer Agent's name. The Printer Agent name cannot contain any spaces; otherwise, LPR does not work properly.
5. (Optional) Enable the following options:

   Filter All LF to CRLF and Append FF to Jobs: Selecting this check box changes bytes in the LPR data stream of all incoming LPR print jobs from Line Feeds to Carriage Returns with Line Feeds and appends a Form Feed to the end of the print job. Typically, these changes are made at the LPR client; however, if you are sure of your users' configurations, you can implement this option.

   Address Ranges: Add an address range only if you want to restrict access to this printer to LPR clients within the address range. When the list is empty, all addresses are allowed to print (default).
6. Click **Apply** or **OK** to update the printer settings.
7. From the UNIX, Macintosh or other LPR client, set up a printer using the LPR Host and LPR Printer/Queue information displayed in Step 4.

Configuring Job Holds

1. In iManager, click **iPrint** > **Manage Printer**.
2. Browse to and select the printer you want to modify.
3. Click **Configuration** > **Job Holds**.
4. Modify the settings.

   Operator Hold: A job does not print until the operator releases it.

   User Hold: A job does not print until the user who has submitted the job releases it.
5. Click **OK** to save the changes.

Managing the Driver Store

Although the default settings lets users print without additional configuration, you might want to modify some settings so that you can manage your printing resources most effectively.

- "Creating Additional Driver Stores" on page 136
- "Understanding the Driver Store Configuration File" on page 136
- "Changing the eDirectory Server Assignment" on page 136

- "Loading or Unloading the Driver Store" on page 137
- "Updating Printer Drivers" on page 137
- "Deleting Printer Drivers" on page 138

Creating Additional Driver Stores

Although you can create additional Driver Stores, you only need one for your iPrint system because the Print Manager saves the downloaded drivers files to disk. If the Print Manager does not have a requested driver, it copies the driver from the Driver Store and then saves it to disk. This process is relatively quick, even for the first user to request a printer driver. We recommend that you maintain only one Driver Store, so you do not need to track which Driver Store contains what printer drivers. Periodically, the Print Manager checks the Driver Store for updated printer drivers.

If you configure multiple Driver Stores that run on the same server, they all point to the same repository of printer drivers. This can be useful because each Driver Store has its own eDirectory object, and you can distribute the objects in your eDirectory tree.

To create a driver store:

1. In iManager, click **iPrint** > **Create Driver Store**.
2. Specify the Driver Store name you want for the Driver Store object.
3. Specify the container name where you want the Driver Store object to reside.
4. Specify a DNS name or IP address of the target server where you want the Driver Store to reside.
5. Specify an eDirectory server that you want the Driver Store to communicate with.

   For fault tolerance, you can specify more than one eDirectory server from the same tree. For more information, see "Changing the eDirectory Server Assignment" on page 136.
6. Click **OK**.

To modify the Driver Store properties or to add printer drivers, click **Manage Driver Store**, then select the Driver Store you want to modify.

Understanding the Driver Store Configuration File

When you create a Driver Store, a configuration file is created in `/etc/opt/novell/iprint/conf`. The filename is `idsd.conf`. Each time you use iManager to create a Driver Store object and assign it to the same server, a separate entry is added to `idsd.conf`. Although you can have several Driver Stores assigned to a server, all printer driver files are stored in one file structure on the server. For information about the entries in the configuration file, see `/etc/opt/novell/iprint/conf/idsd.conf`.

Changing the eDirectory Server Assignment

If you need to change the eDirectory server assignment for the Print Manager or Driver Store, edit the Driver Store Server1= entry in the corresponding configuration file, *`print_manager_name`*`.context.ipsmd.conf` or `idsd.conf`, located in `/etc/opt/novell/iprint/conf`.

NOTE: As many as two additional servers can be specified, using Driver Store Server2 and Driver Store Server3. Driver Store Server1 is considered to be the primary eDirectory server. Driver Store Server2 and Driver Store Server3 are considered to be secondary servers.

Loading or Unloading the Driver Store

You can start and stop the Print Manager in two ways:

- "Using the Command Line" on page 137
- "Using iManager" on page 137

Using the Command Line

The Driver Store uses systemctl scripts for starting and stopping the daemon. To load the Driver Store from the command line, enter `systemctl start novell-idsd.service`

The following systemctl script actions are also valid:

Table 10-2 *Driver Store Actions*

Action	Description
reload or force-reload	Stops and then starts the daemon.
start	Starts the daemon.
status	Displays the status of the daemon and the name of the Driver Store.
stop	Stops the daemon.

Using iManager

On the Driver Store Control property page, you can view the Driver Store's status and unload or load the Driver Store daemon.

1. In iManager, click **iPrint** > **Manage Driver Store**.
2. Browse to and select the Driver Store you want.
3. Click **Driver Store Control** > **Shutdown** to stop the Driver Store process.
4. Click **OK**.

Updating Printer Drivers

1. Add a new driver.

   For more information on adding a new driver, see "Managing Printer Drivers" on page 30.
2. Associate the printer to the driver.

   For more information on associating a printer to the driver, see Step 3 on page 36.

NOTE: Only the new iPrint Clients auto-update the drivers. For the existing or old Print Clients, you need to manually install and associate the drivers.

Deleting Printer Drivers

1. In iManager, click **iPrint** > **Manage Driver Store**, then browse to and select the Driver Store you want.
2. Click **Drivers**, then select the client platform you want to work with.
3. Select the driver you want to delete.
4. Click **Delete**.
5. Click **OK**.

Configuring LDAP

iPrint uses LDAP to verify rights to perform various iPrint operations, including authenticating users for printing, and performing management tasks such as uploading drivers. During the iPrint installation, iPrint attempts to identify the top-most container of the eDirectory tree and sets the base DN to this container for the AuthLDAPDNURL entry in `/etc/opt/novell/iprint/httpd/conf/iprint_ssl.conf`. For most installations, this is adequate because users are often distributed across containers. However, if you have multiple peer containers at the top of your eDirectory tree, leave this field blank so the LDAP search begins at the root of the eDirectory tree.

Use the following syntax for the AuthLDAPDNURL entry:

`ldap://host:port/basedn?attribute?scope?filter`

Use the following example of a typical AuthLDAPDNURL entry where the base DN is set to a container called DivisionA:

```
"ldaps://server1.my_company.com/C=DivisionA???(objectClass=user)"
```

Use the following example of a modified AuthLDAPDNURL entry where the base DN is removed. This means that the search begins at the root of the eDirectory tree:

```
"ldaps://server1.my_company.com/???(objectClass=user)"
```

TIP: For fault tolerance, you can specify additional LDAP servers if an LDAP server is unavailable. Additional servers use the attributes prescribed on the first server. Additional LDAP servers are separated by a space. An AuthLDAPDNURL entry specifying multiple LDAP servers appears like `ldaps://ldap.domain.com ldap1.domain.com/o=novell???(objectClass=user)`

For more information about AuthLDAPURL, see the AuthLDAPUrl Directive (http://httpd.apache.org/docs/2.0/mod/mod_auth_ldap.html#authldapurl).

Auto Clearing a Printer Queue

This features automatically deletes the staled print jobs after a fixed amount of time.

1. Update the `/etc/opt/novell/iprint/conf/iprintconf.properties` file with the following parameter:

   `job_expiry_timeout=x`

   where *x* represents time in minutes.

   - If the expiry time is not set or set to `0` this feature is not enabled.
   - If the expiry time is set less than 60 minutes, then the scheduler runs every x/2 minutes. For example, if the `job_expiry_timeout=40` then the scheduler will run every 40/2 = 20 minutes. So every 20 minutes, the jobs that are in the print queue for 40 or more minutes are deleted.
   - If the expiry time is set to 60 minutes or more (maximum time that can be set is 8640 minutes i.e. 6 days), then the scheduler runs every 15 minutes. Every 15 minutes, the jobs that are in the print queue for 60 or more minutes are deleted.

   - **IMPORTANT:** This setting is effective only when the printer is in an error state. Jobs are only deleted if the printer status displays “Error Printing”. It is not deleted if the jobs are paused by the administrator. To verify the status of the printer, see *OES 2018 SP3: iPrint Manager Health Monitor Administration Guide*.

   ---

2. Restart Print Manager

   `rcnovell-ipsmd restart`

This setting is enabled for all the printers in a Print Manager.

NOTE: On restarting the Print Manager, if printers are not listed, you must restart the Mobile server (novell-iprint-mobile).

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11 Setting Up a Secure Printing Environment

You can set up a secure printing environment by using the following methods:

- "Setting Access Control for Your Print System" on page 141
- "Using SSL/TLS for Secure Printing" on page 145

Setting Access Control for Your Print System

Your print system is designed to take full advantage of eDirectory. You receive all the benefits of eDirectory security and ease of management provided by the industry's most advanced and robust directory service. The Access Control feature lets you specify the access that each User, Group, or Container object has to your printing resources. Currently, access control for printers is only supported on the Windows iPrint Client.

Access control roles are mutually exclusive, even though the same individual might need to perform tasks reserved for different roles. For example, only Printer Managers can add or delete printer operators or printer users. In a similar way, managers and operators must also be designated as users for a printer before they can submit print jobs to it.

In actual implementation, the defaults prevent most problems that might occur from these distinctions. For example, a manager is automatically designated an operator and user, and an operator of a printer is automatically designated a user of that printer.

The creator of an object is automatically granted privileges for all available roles for the type of object being created.

The following sections describe some of the security issues and features you might find useful as you plan your print system setup:

- "Setting Access Control for Printers" on page 141
- "Setting Access Control for the Print Manager" on page 143
- "Setting Access Control for the Driver Store" on page 144

Setting Access Control for Printers

Printer security is ensured through the assignment of the manager, operator, and user access control roles and by the strategic placement of your printers and printer configurations.

- "Printer Access Control Roles" on page 142
- "Assigning Printer Access Control Roles through Printer Objects" on page 143

Printer Access Control Roles

Different User, Group, or container objects can have different access rights to the same printer. For example, if you want only certain users to be able to send jobs to a particular printer, you can specify which users should have access and what access roles each user should have.

The following table describes the rights and privileges associated with each of the printer access control roles:

Table 11-1 *Printer Access Control Roles*

Role	Description
Manager	Tasks performed exclusively by the Manager are those that require the creation, modification, or deletion of objects, as well as other edirectory administrative functions. Managers are automatically designated as Operators and Users, so they can perform all tasks assigned to those operator roles. Typical manager functions include the following: ◆ Modifying and deleting Printer objects ◆ Adding or deleting operators and users for a printer ◆ Adding other managers ◆ Configuring interested-party notification ◆ Creating, modifying, or deleting printer configurations
Operator	Operators are automatically designated as Users, so they can perform all tasks assigned to Users roles. Printer management tasks performed by the operator include the following: ◆ Performing all of the functions available through the Printer Control page ◆ Pausing, restarting, or reinitializing printers ◆ Reordering, moving, copying, and deleting jobs ◆ Setting printer defaults, including locked properties Operators cannot create, modify, or delete eDirectory objects or perform other eDirectory administrative functions.
User	Tasks performed by users include the following: ◆ Submitting print jobs ◆ Managing print jobs they own (users cannot copy, move, reorder, or remove jobs they do not own) To simplify administration, the container a printer resides in is automatically assigned as a user for that printer, so all users in that container and its subcontainers can use that printer without being added to the list. You can delete the container from the list if you want to limit access to certain users, groups, or roles.

Assigning Printer Access Control Roles through Printer Objects

Different User, Group, or Container objects can have different access rights to the same printer. For example, if you want only certain users to be able to send jobs to a particular printer, you can specify which users should have access and what access roles each user should be given.

1. In iManager, click **iPrint** > **Manage Printer**.
2. Browse to and select the printer you want to enable Access Control for.
3. Click the **Access Control** tab.
4. Add or delete Users, Groups, or Container objects to the different access control roles.
5. Click **OK**.

Setting Access Control for the Print Manager

Print Manager security is ensured through the assignment of the manager access control role.

- "Print Manager Access Control Role" on page 143
- "Assigning the Manager Role for Print Managers" on page 143

Print Manager Access Control Role

The only access control role available for the Print Manager is that of manager. The following table explains the tasks performed by the manager role:

Table 11-2 *Print Manager Access Control Role*

Role	Description
Manager	Tasks performed exclusively by the manager are those that require the creation, modification, or deletion of print system objects, as well as other eDirectory administrative functions. Typical manager functions include the following: ◆ Creating Printer Agents and Print Manager objects ◆ Adding or deleting operators and users for a printer ◆ Adding other managers ◆ Configuring interested-party notification ◆ Creating, modifying, or deleting printer configurations

Assigning the Manager Role for Print Managers

To create manager assignments for your Print Manager objects:

1. In iManager, click **iPrint** > **Manage Print Manager**.
2. Browse to and select the Print Manager you want to enable access control for.
3. Click the **Access Control** tab.

4 Add or delete Users, Groups, or containers to the manager role.

5 Click **OK**.

Setting Access Control for the Driver Store

The Driver Store security is ensured through the assignment of manager access control roles.

- "Driver Store Access Control Roles" on page 144
- "Assigning Managers for the Driver Store" on page 144

Driver Store Access Control Roles

The access control roles available to the Driver Store are manager and public access user. The following table explains these roles:

Table 11-3 *Driver Store Access Control Roles*

Role	Description
Manager	Tasks performed exclusively by the Driver Store manager are those that require the creation, modification, or deletion of Driver Store objects, as well as those that involve other eDirectory administrative functions. Typical manager functions include the following: ◆ Creating, modifying, and deleting Driver Store objects ◆ Adding other managers ◆ Adding resources to the Driver Store
Public Access User	A public access user is a role assigned to all entities on the network that are users of resources provided by the Driver Store. This role is assigned by default and does not require specific administrative action by the Driver Store manager. Typically, Print Managers refresh their cached copies of printer drivers for the printers they are hosting with updated printer drivers from the Driver Store.

Assigning Managers for the Driver Store

To create Manager assignments for your Driver Store objects:

1 In iManager, click **iPrint** > **Manage Driver Store**.

2 Browse to and select the Driver Store you want to enable access control for.

3 Click the **Access Control** tab.

4 Add or delete Users, Groups, or Containers to the manager role.

5 Click **OK**.

Using SSL/TLS for Secure Printing

Secure printing takes advantage of SSL, which requires users to authenticate with their eDirectory usernames and passwords. Users authenticate once per eDirectory tree per session. Between the client and the Print Manager, the print data is encrypted and all print communication uses port 443. Without secure printing, the printer is available to anyone inside the firewall on the network and the print data is not encrypted to the server. Secure printing works in conjunction with the security level set for the printer. All print data between the server and the printer is not encrypted because most printers do not support encrypted data. Also, when you enable iPrint Direct, data is not encrypted between the client and the printer.

If you are using the latest iPrint Client and server software, iPrint automatically attempts to use TLS for printing on port 631. TLS printing supports encrypted and non-encrypted print communication through port 631. Whether or not encryption is used is dependent on the secure printing setting of the Printer Agent. If secure printing is enabled on a printer, the user is required to authenticate, and the print data is encrypted. If secure printing is not enabled, the user does not authenticate and the print data is not encrypted.

- "Enabling SSL/TLS" on page 145
- "Saving Passwords for Secure Printers" on page 145
- "Configuring TLS Printing with Proxies" on page 145

Enabling SSL/TLS

1. In iManager, click **iPrint** > **Manage Printer**.
2. Browse to and select the Printer object you want to modify.
3. Click **Client Support** > **iPrint Support**.
4. Select the **Enable Secure Printing** check box.
5. Click **Apply** or **OK** to update the printer settings.

Saving Passwords for Secure Printers

When users print to a secure printer, they are prompted for the eDirectory username and password. Users can select to have their workstations remember their password for printing. For Windows NT/2000 users, passwords are saved on a per-user basis.

For more information, see "Managing Passwords for Remote iPrint Servers" on page 68.

Configuring TLS Printing with Proxies

To use a proxy with secure printing:

1. Create a file in `/etc/opt/novell/httpd/conf.d` named `mod_proxy.conf`.
2. Add the following lines to the file:

```
LoadModule proxy_module /usr/lib/apache2-worker/mod_proxy.so
LoadModule proxy_connect_module /usr/lib/apache2-worker/
mod_proxy_connect.so
LoadModule proxy_http_module /usr/lib/apache2-worker/mod_proxy_http.so

# This is the port the proxy will listen on
Listen 8080

ProxyRequests On
ProxyVia On
<Proxy *>
    Order deny,allow
    Allow from All
</Proxy>
AllowCONNECT 631 443
```

3. Set the proxy port on the client to 8080.
4. Restart Apache.

To set up a Squid proxy:

IMPORTANT: Implementing the following changes lets your users print using TLS; however, there are security risks involved. Contact your Security Administrator before completing these steps.

---

1. Rename the Squid configuration file by using the following command: `mv /etc/squid/squid.conf /etc/squid/squid.conf.orig`
2. Create a new `/etc/squid/squid.conf` file.
3. Add the following lines to the file:

```
http_port 3128

acl all src 0.0.0.0/0.0.0.0
acl manager proto cache_object
acl localhost src 127.0.0.1/255.255.255.255
acl to_localhost dst 127.0.0.0/8
acl SSL_ports port 80 443 563 631
acl Safe_ports port 80          # http
acl Safe_ports port 21          # ftp
acl Safe_ports port 443 563 631 # https, snews
acl Safe_ports port 70          # gopher
acl Safe_ports port 210         # wais
acl Safe_ports port 1025-65535  # unregistered ports
acl Safe_ports port 280         # http-mgmt
acl Safe_ports port 488         # gss-http
acl Safe_ports port 591         # filemaker
acl Safe_ports port 777         # multiling http
acl CONNECT method CONNECT

acl ipp_access port 631
http_access allow all
miss_access allow all
http_access allow CONNECT ipp_access
http_reply_access allow all
icp_access allow all
miss_access allow all
```

4. Set the proxy port on the client to 3128.
5. Restart Squid.

12 Troubleshooting iPrint

The following are some common troubleshooting issues:

- "IPP Page Fails to Launch On Upgrading From OES 2015 SP1 to OES 2018 SP1" on page 149
- "Recreate the Print Manager Database" on page 150
- "eDirectory Passwords Are Not Shared" on page 151
- "Users Created with Admin Rights Do Not Have Full Rights" on page 151
- "Non-replica eDirectory Server Issues" on page 151
- "ZLIB error during printer installation, profile creation, or upload" on page 152
- "Dragging and dropping printers to a printer map might result in space restriction errors" on page 152
- "Interactive Service Dialog Box" on page 152
- "Problem with iPrntman" on page 153
- "Printer Installation Fails" on page 153
- "iPrint Service Fails when Renaming a Volume Where iPrint Is Hosted" on page 153
- "Upgrading iPrint on a Cluster Does Not Upgrade the iPrint Clients" on page 154
- "iPrint LUM error when running the iprint_nss_relocate script" on page 155
- "Upgrading iPrint Does Not Update the ICM parameters of the iprint.ini file" on page 155

IPP Page Fails to Launch On Upgrading From OES 2015 SP1 to OES 2018 SP1

On OES 2018 SP1, the IPP page fails to display, if the `iprint_ssl.conf` and `iprint_g.conf` files are customized on OES 2015 SP1 server. Upgrading to OES 2018 SP1 changes both these (`iprint_ssl.conf` and `iprint_g.conf`) files to accommodate requirements of the new version of Apache (Apache 2.2 to Apache 2.4).

To resolve this issue, refer to the TID 7023593. The steps in the TID are also valid for OES 2018 SP1 server.

Recreate the Print Manager Database

If you have accidentally deleted the Print Manager, then it can be restored by using the XML backup file. The `/var/opt/novell/iprint/<PrintManager.context>.psm/padbtxt.xml` file includes all the relevant information to restore the Print Manager database. When the Print Manager is deleted, the `padbtxt.xml` file is copied to the `/tmp` folder and renamed with the name of the Print Manager and timestamp.

Perform the following steps to restore the Print Manager:

1. Locate the XML file. It will be available in the `/tmp` directory.
   - Syntax:

     ```
     /tmp/systemd-private-<HEX Value>-apache2.service-<Characters>/tmp
     ```
   - Example:

     ```
     /tmp/systemd-private-ac0dbc6a87f24f2f940484c10937a5f0-
     apache2.service-WePGnZ/tmp
     ```
2. Create the Print Manager object.

   When creating the Print Manager, refer to the backup XML to ensure you are using the same information:
   - Print Manager Name = first part of the <dn> within the XML
   - Container Name = latter part of the <dn> within the XML
   - eDir Server name = <dserver> part of the XML, however, browse to the object. Don't use the network address.
   - Driver Store Name = <ids> part of the XML
   - iPrint Service = <hostname> of the XML. It is very important this part is identical. Changing this value could result in all workstations auto removing and auto re-installing all printers installed to workstations.
3. Shutdown the Print Manager.

   ```
   rcnovell-ipsmd stop
   ```
4. Import the data from the backup XML file:
   - Syntax:

     ```
     /opt/novell/iprint/bin/ipsmd -x /tmp/systemd-private-<HEX Value>-
     apache2.service-<Characters>/tmp/<Print Manager
     name>.<Context>_<Year-Month-Date>__<HR:MN:SEC> -u cn=<eDir admin
     name>,o=<OrganizationName>
     ```
   - ```
     /opt/novell/iprint/bin/ipsmd -x /tmp/systemd-private-
     ac0dbc6a87f24f2f940484c10937a5f0-apache2.service-WePGnZ/tmp/
     iPrintnew.iPrintAppliance_2018-02-16__22:58:48 -u
     cn=admin,o=MyContainer
     ```

     Provide the admin password
5. On successfully completing the import, start the Print Manager:

   ```
   rcnovell-ipsmd start
   ```

   The Print Manager is successfully loaded.
   ```

eDirectory Passwords Are Not Shared

The iPrint Client and the Client for Open Enterprise Server do not share eDirectory passwords on Windows systems running OES 2015 or later under the following scenario: Uninstalling Client for Open Enterprise Server and then reinstalling it on a machine where iPrint (latest version) and Client for Open Enterprise Server already existed.

To resolve this issue, uninstall and reinstall the iPrint client.

Users Created with Admin Rights Do Not Have Full Rights

On Windows 2008 and Windows 2008 R2 terminal servers, the user with administrator rights (non-built-in administrator) does not have full rights as the default administrator. The following issues are observed with these users (non-built-in administrators):

- The **Terminal Services** tab does not appear in the iPrint Client.
- Printer installation fails when the **Install workstation printers only (rights required)** option is selected in the **Terminal Services** tab. To install the printers, run the browser in the **run as administrator** mode.

To resolve this issue, login to the local administrator account of the workstation, and try again.

Non-replica eDirectory Server Issues

These issues should be understood in the context of eDirectory non-replica servers. These issues can occur on OES or eDirectory. For more information, see documentation on the OES 2018 SP3 Online documentation site.

Unable to start/stop the Print Manager/Driver Store from iManager

Explanation: You cannot start/stop the Print Manager/Driver Store using iManager. Unable to bind to the eDirectory throws an error message with the code FFFFFD8E (-626).

Possible Cause: The SLP configuration of the non-replica OES server. Two modes of SLP configuration for a non-replica OES server are:

- SLP-DA (Directory Agent)
- Multicast SLP

There are two possible problems for a non-replica OES server in SLP-DA mode:

- The non-replica OES server is not able to reach the DA server.
- The replica OES server is not able to reach the DA server.

There is one possible cause for this problem for a non-replica OES server in Multicast SLP mode:

- The firewall is on, so multicast communication is not possible.

Action: If the message indicates *Non-replica server is not able to reach the DA server*, ensure the DA server is up.

If the message indicates *Replica server is not able to reach the DA server*, ensure the DA server is within the multicast range of the replica server. If it is not within the multicast range, provide the IP address of the DA server in the SLP configuration file of the replica server.

For details on SLP configuration and setting up the DA server, see "Configuration Parameters" of the *NetIQ eDirectory 8.8 Administration Guide*.

For the *Multicast SLP* configuration, turn the firewall off.

ZLIB error during printer installation, profile creation, or upload

This happens when the machine has space constraint problems. Performing Printer Install, Upload, or Profile Creation actions on a machine that is almost out of space results in a ZLIB error.

Dragging and dropping printers to a printer map might result in space restriction errors

When you create a map by using the map tool, you might not be able to drag a printer icon and drop it on the top portion of the map. This happens if you have scrolled down the map, and have not scrolled back up to the original position. When you scroll back up to the original position for the map you can drag a printer icon and drop it on the map.

Interactive Service Dialog Box

This issue is specific to Vista and Windows Server 2008 platforms.

The iPrint dialog box is intercepted on Vista and Windows Server 2008

Explanation: The iPrint dialog box on Vista and Windows Server 2008, sometimes displays the Interactive Services dialog box .

Possible Cause: Vista restricts applications from being launched from the system context. This has been fixed in iPrint, but there might be random situations where it still happens.

Action: To avoid seeing this dialog box, the interactive service needs to be stopped by using the following procedure:

1. Right-click **My Computer**.
2. Select **Manage**.
3. Select **Services**.
4. Double-click **Interactive Service Detection** service from the list.
5. Click **Stop**.

Problem with iPrntman

This issue is specific to migration.

Unable to get the user FDN and/or password from the request when using iPrintman

Explanation: After the upgrade is over, iManager shows that both the Driver Store and PSM are down.

Possible Cause: AS problem with the Small Footprint CIM Broker (SFCB) configuration.

Action: Use the following procedure:

1. Use the `systemctl stop novell-idsd.service` and systemctl `stop novell-ipsmd.service` commands to stop the idsd and ipsmd daemons before the upgrade.
2. Use the `systemctl start novell-idsd.service` and `systemctl start novell-ipsmd.service` commands to restart the idsd and ipsmd daemons after the upgrade is over.

Printer Installation Fails

The printer installation fails when you install a printer through IPP or the command line utility.

Unable to install the printer when the specified PPD file is not found

Explanation: When you install a printer, the iPrint Client verifies the availability of the filters specified in the PPD file. If the filters are not available, the printer installation fails.

Action: Search for a CUPS-compatible driver for the printer that failed to install. Use the `/usr/bin/cupstestppd` utility to verify if the PPD is supported by CUPS.

iPrint Service Fails when Renaming a Volume Where iPrint Is Hosted

If you rename the NSS volume that hosts the Print Manager, the iPrint IPP page fails to display and the iPrint configuration breaks. To re-establish the symbolic links broken because of renaming the volume, use the following steps:

1. Run the `iprint_nss_relocate` script, and use the new volume path.
2. Restart idsd (`systemctl start novell-idsd.service`) and ipsmd (`systemctl start novell-ipsmd.service`).

Upgrading iPrint on a Cluster Does Not Upgrade the iPrint Clients

IMPORTANT: This issue applies only if you have configured iPrint to store its configuration on a shared NSS volume in a cluster.

NOTE: The upgrade issue is also seen on Mac operating systems. The iPrint client download from the IPP page fails because the **Install IPP client** link on the IPP page does not work.

On servers that store their iPrint configuration on an NSS volume, the iPrint configuration folder (`/var/opt/novell/iprint/htdocs`) at the root of the file system is actually a symbolic link to the NSS volume.

During a cluster upgrade to OES 2015 or later, the connection between the server being upgraded and the shared NSS volume is taken down, making the symbolic link invalid. When the upgrade process determines that the symbolic link is invalid, it overwrites the symbolic link with an actual folder on the system disk, so that when the server comes back up, the NSS volume is inaccessible. The files it contains have not been upgraded.

OES 2015 or later restores the symbolic link to the shared NSS volume, but it doesn't update the iPrint files. Therefore, you must manually copy the files to the shared NSS volume, while at the same time preserving the configuration settings in the `iprint.ini` file located there.

To address this issue, bring up the shared NSS volume where the iPrint configuration files are stored and do the following:

1. On the upgraded server's file system, check to make sure that the `/var/opt/novell/iprint/htdocs` symbolic link is provinding access to the shared NSS volume.
2. Make a backup copy of the `iprint.ini` file that is located in the `/var/opt/novell/iprint/htdocs` folder. You use this to restore the original iprint.ini file in Step 5 on page 155.
3. (Conditional) If you are upgrading an OES 2 FCS server and you use the automatic client update feature, do the following:
   - **3a** Open the backup copy of the `iprint.ini` file in a text editor.
   - **3b** Locate the following lines:

     ```
     OESWinVersion     = 432     ;This is set by OES, Inc.
     OESWinVer2K       = 432
     OESWinVerXP       = 432
     ```

   - **3c** Change the version number for each client type from 432 to 438 as follows:

     ```
     OESWinVersion     = 438     ;This is set by OES, Inc.
     OESWinVer2K       = 438
     OESWinVerXP       = 438
     ```

   - **3d** Save the file.
4. Copy the contents of the `/var/opt/novell/iprint_client/htdocs` folder to the `/var/opt/novell/iprint/htdocs` folder by using the following command:

   ```
   cp -rfp /var/opt/novell/iprint_client/htdocs/* /var/opt/novell/iprint/htdocs/
   ```

IMPORTANT: Do not delete the contents of the `/var/opt/novell/iprint/htdocs` folder. Only overwrite the folder contents. The `/var/opt/novell/iprint/htdocs/` folder contains additional files not found in the `/var/opt/novell/iprint_client/htdocs/` folder.

5 Replace the `iprint.ini` file in the `/var/opt/novell/iprint/htdocs` folder with the backup copy that you created in Step 3, and if applicable, modified in Step 4 on page 154.

iPrint LUM error when running the iprint_nss_relocate script

You might see the following error when you execute the NSS relocate script: `iPrint LUM User does not exist in container <iprint_lum_container>`.

One of the reasons for this error could be that the LUM-enabled user and group names might be incorrect.

This can be solved by checking whether the iPrint LUM enabled user and group names (iprint and iprintgrp) are lowercase. If they are not, rename them to lowercase and re-run the script.

NOTE: All system users and groups should be assigned names in lowercase, which is expected in Linux and UNIX.

Upgrading iPrint Does Not Update the ICM parameters of the iprint.ini file

In cluster environments, when upgrading Micro Focus iPrint, the ICM parameters of the `iprint.ini` file do not get updated. To overcome this, you need to manually copy those parameters to the correct location in the `iprint.ini` file.

A Supported Browsers for iPrint

The section provides information on which web browsers are supported for different iPrint tasks and operations.

- "iPrint Client Supported Browsers" on page 157
- "Supported Browsers for the iPrint Plug-In and iManager" on page 157
- "Supported Browsers for the iPrint Map Designer" on page 158

iPrint Client Supported Browsers

The following table indicates which browsers are supported with the various iPrint Client platforms:

iPrint Client Platform	Supported Browsers
Macintosh	• Safari • Mozilla Firefox • Google Chrome
Windows 7	• Internet Explorer • Mozilla Firefox • Google Chrome
Windows 8.1	• Internet Explorer • Mozilla Firefox • Google Chrome
Windows 10	• Internet Explorer • Mozilla Firefox • Google Chrome • Microsoft Edge

NOTE: Mozilla Firefox and Google Chrome browsers are supported only for installing printers.

Supported Browsers for the iPrint Plug-In and iManager

The iPrint plug-in with iManager supports the following browsers:

- Internet Explorer
- Mozilla Firefox

When you upload printer drivers and PPD files, you should use the following browsers for the operations indicated:

- “Uploading PPD Files Using iManager” on page 158
- “Uploading Windows Printer Drivers Using iManager” on page 158

Uploading PPD Files Using iManager

iPrint Client Platform	Supported Browser	Upload PPD file to Driver Store on Linux
Windows	Internet Explorer	Supported using the **Add from File** button.

NOTE: On Mac operating systems, PPD upload is not supported. PPD files for Mac can be uploaded using Internet Explorer on Windows. Alternatively, you can also upload the PPD files for Mac and Linux using the `iprntcmd` command from a terminal session. For uploading the PPD files for Mac and Linux, refer “Using iprntcmd on Linux and Macintosh” on page 76.

Uploading Windows Printer Drivers Using iManager

Client	Supported Browser	Upload Windows Printer Driver to Driver Store on Linux
Windows	Internet Explorer	Supported

Supported Browsers for the iPrint Map Designer

The iPrint Map Designer works only with Microsoft Internet Explorer.

B iPrint Log Files Location

This section details the location of the iPrint log files.

Name	Location
Driver Store	`/var/opt/novell/log/iprint/idsd.log`
Print Manager	`/var/opt/novell/log/iprint/ipsmd.log`
iPrint Gateway	`/var/opt/novell/log/iprint/iprintgw.log`
LPR enabled printers	`/var/opt/novell/log/iprint/ilprsrvrd.log`
Print Manager CIM Provider	`/var/opt/novell/log/iprint/ipsmprov.log`
Cluster related	`/var/opt/novell/log/iprint_nss_relocate.log`
ZCM Migration	`/var/opt/novell/migration/zcm10-migration.log`
iPrintman	`/var/opt/novell/log/iprintmgmt/iprintman0.log`

New Log Levels

Update 1-OES 2018-Mandatory patch introduces new log levels for `ipsmd.log`.

To change the log levels, do the following:

1 Edit the `/etc/opt/novell/iprint/conf/iprintconf.properties` file if the log level information is not available after applying the patch.

Sample iprintconf.properties file

```
platform=oes
mobility_addon_installed=false
mobility_addon_configured=false
```

1a Add the following information:

```
#Log level for Print Manager logs(ipsmd.log). Any other level set
other than the following will be reset to "warning".
# 1) warning(logs WARNING and FATAL level logs)
# 2) info(logs all types of logs)
server_log_level=warning
```

If the `server_log_level=warning`, it logs Warning and Fatal messages.

To log all types of logs, change the parameter to `info`.

```
server_log_level=info
```

Sample iprintconf.properties file

```
platform=oes
mobility_addon_installed=false
mobility_addon_configured=false

#Log level for Print Manager logs(ipsmd.log).Any other level set
other than the following will be reset to "warning".
# 1) warning(logs WARNING and FATAL level logs)
# 2) info(logs all types of logs)
server_log_level=info
```

NOTE: Only add the log level information, do not edit the existing information from the `iprintconf.properties` file.

---

2 To apply the log level changes, you must restart Print Manager, `systemctl restart novell-ipsmd.service`

C iPrint Commands and Utilities

This section contains information about iPrint commands and utilities.

- “iprntman(1)” on page 162
- “iprntcmd(1)” on page 177
- “ipsmd(1)” on page 181

iprntman(1)

Name

iprntman - Manage iPrint Managers and Driver Stores.

Syntax

This section contains iPrint commands and utilities used on the Linux platform.

`iprntman <target> <targetcommand><options>`

Description

iprntman is a management tool used to manage and configure iPrint print managers, driver stores, printers, pools, and print jobs. You can also import driver profiles from one server to the another.

Help

To display help about a specific target, use the following command:

Syntax

`iprntman <target> -h or iprntman <target> --help`

Example:

`iprntman psm -h or iprntman ids --help`

Target Summary

A target is the iPrint object type you want to manage. It includes either the target's distinguished name (DN) in LDAP format or just the common name.

NOTE: FDN is used for target's PSM and iPrint Driver Store (IDS) iprntman commands, and the common name is used for printer iprntman commands.

For example, if you want to modify settings for a printer with the common name *colorprinter*, the command and target appear as iprntman printer *colorprinter*.

target_type

driver

target_instance

<repository_name> <driver_name>

target_type

ids

target_instance

<IDS_DN>

target_type

job

target_instance

<printer_agent_name <JOBID>>

target_type

pool

target_instance

<pool_name>

target_type

printer

target_instance

<printer_agent_name>

target_type

profile

target_instance

<profile_name>

target_type

psm

target_instance

<print_manager_DN>

All distinguished names (DN) should be in LDAP format. If the name of a target instance or option contains a space, use quotes, for example, "HP LaserJet 4Si".

Target Commands

Target commands indicate which operation to perform for the specified target. For targets whose name is a distinguished name (DN), the DN is given in LDAP format. For example, to modify settings for a PSM with a DN of cn=manager,ou=printing,o=my_company, run the following command:

```
iprntman psm cn=manager,ou=printing,o=my_company
```

Driver Commands

For driver options, see “Driver Options” on page 171.

Syntax

```
iprntman driver <repos_name> <driver_name> <command> <options>
```

Example

```
iprntman driver driver_windows-nt-5_x86-32_en "HP Color LaserJet 5500
PS" -i
```

-d | --delete

Deletes a printer driver. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the `-f` or `--force` option.

-i | --info

Displays driver information.

-l | --list

Lists drivers in a repository.

--upload

Uploads the driver to the IDS.

--download

Downloads the driver from the IDS.

Driver Store (IDS) Commands

Syntax

```
iprntman ids <ids_dn> <command> <options>
```

Example

```
iprntman ids cn=ids1,ou=print,o=my_company -c --hostname
printing.my_company.com --use-directory-server ds.my_company.com
```

-c | --create

Creates an IDS. See IDS OPTIONS for specific options.

-d | --delete

Deletes an IDS. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the `-f` or `--force` option.

-i | --info

Displays information about an IDS.

-l | --list

Lists IDS instances.

--start

Starts IDS. All IDS instances on the server are started.

--status

Displays the status of the IDS.

--stop

Stops IDS. All IDS instances on the server are stopped.

Job Commands

Syntax

```
iprntman job <printer_name> <job_id> <command> <options>
```

Example

```
iprntman job HP_ColorLaserJet 3 -l
```

-d | --delete

Deletes a print job. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the `-f` or `--force` option.

-i | --info

Displays information about a print job.

-l | --list

Lists all jobs for the specified printer.

--pause

Pauses the processing of a print job.

--resume

Resumes the processing of a print job.

--status

Displays the status of a print job.

Pool Commands

Syntax

```
iprntman pool <pool_name> <command> <options>
```

Example

```
iprntman pool Xerox_printer_pool -c --add-printer Xerox_printer -s
ds.my_company.com
```

-c | --create

Creates a printer pool on the server. Creation of an empty pool is not allowed. It is mandatory to pass the `--add-printer` option with this command.

-d | --delete

Deletes the specified printer pool. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the `-f` or `--force` option.

-m | --modify

Modifies the printer pool.The modification includes adding or removing printers from the pool.

--add-printer *<printer_name>*

Adds the printer to the printer pool. This option works only with the `-c` option or `-m` option.

Example

```
iprntman pool Xerox_printer_pool \-m --add-printer Xerox_printer
```

--remove-printer *<printer_name>*

Removes the printer from the printer pool. This option works only with the `-m` option.

Example

```
iprntman pool Xerox_printer_pool \-m --remove-printer Xerox_printer
```

Print Manager (PSM) Commands

Syntax

```
iprntman psm <psm_dn> <command> <options>
```

Example

```
iprntman psm cn=PrintManager1,ou=print,o=my_company -c --hostname
printing.my_company.com --use-ids cn=ids,ou=print,o=my_company --use-
directory-server ds.my_company.com
```

-c | --create

Creates a Print Manager. See PRINT MANAGER (PSM) OPTIONS for specific options.

-d | --delete

Deletes the specified Print Manager. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the -f or --force option.

-i | --info

Displays information about the Print Manager.

-l | --list

Lists the Print Manager instances.

--set-default

Make this Print Manager the default manager. This is useful when you have created several Print Managers running on the same machine and want to specify one to be the default on the next load. When you load a Print Manager, it is automatically set as the default.

--start

Starts the default Print Manager. If the Print Manager DN is given, it starts the Print Manager corresponding to DN; otherwise, the current default Print Manager is started. When a Print Manager is started, it becomes the default Print Manager.

--status

Displays the Print Manager status.

--stop

Stops the running Print Manager. If the Print Manager DN is given, it verifies that the running Print Manager corresponds to the Print Manager DN; otherwise, the currently running Print Manager is stopped.

Printer Commands

Syntax

```
iprntman printer <printer_name> <command> <options>
```

Example

```
iprntman printer Xerox_Color -d -s server1.my_company.com
```

-c | --create

Creates a Printer Agent. See PRINTER OPTIONS for specific options.

-d | --delete

Deletes the specified Printer Agent. This operation prompts interactively to reduce unintentional deletes. To skip the confirmation prompt, use the -f or --force option.

--grant-access *<object_DN>*

Adds the object as a user to the printer's Access Control List (ACL), explicitly granting print access to the object. If the printer is a secure printer (see --ssl-required), only supervisors and users with rights to the printer can access the printer. Access can be granted to User, Group, and Container objects. Granting access to a group or container allows contained users and groups to inherit access.

--grant-operator *<object_DN>*

Adds the object as an operator to the printer's ACL list, explicitly granting Operator Role access to the object. Only supervisors and users with Operator or Manager rights to the printer can manage the printer. Access can be granted to User, Group, and Container objects. Granting access to a group or container allows contained users and groups to inherit access.

--grant-manager *<object_DN>*

Adds the object as a manager to the printer's access ACL list, explicitly granting print access to the object. If the printer is a secure printer (see --ssl-required), only users with rights to the printer and supervisors can access the printer. Access can be granted to User, Group, and Container objects. Granting access to a group or container allows contained users and groups to inherit access.

-i | --info

Displays printer information.

-l | --list

Lists target instances.

-m | --modify

Modifies properties of the printer. See PRINTER OPTIONS for specific options.

-n | --new-name

Renames the printer.

--pause-input

Pauses printer input.

--pause-output

Pauses output from the printer.

--purge-all-jobs

Deletes all jobs queued for this printer.

--resume-input

Resumes printer input.

--resume-output

Resumes output from the printer.

--start

Starts the Printer Agent when it is shut down.

--revoke-access *<object_DN>*

Removes the object as a user from the printer's ACL list, revoking explicitly granted print access from the object.

Removing a user, group, or container from the ACL might not take away the access rights because they might also inherit access based on other permissions.

For example, if the ACL contains a user named “Bob” and the group named “Sales”, and Bob is also a member of the group Sales. Revoking access from Bob is not sufficient to prohibit Bob's access to the printer. Bob still inherits the rights as a member of the group Sales.

--revoke-manager *<object_DN>*

Removes the object as a manager from the printer's ACL list revoking the explicitly granted print access from the object.

Removing a user, group, or container from the ACL might not take away the access rights because they might also inherit access based on other permissions.

For example, if the ACL contains user named “Bob” and the group “Sales”, and Bob is also a member of group Sales. Revoking access from Bob is not sufficient to prohibit Bob's access to the printer. Bob still inherits rights as a member of the group Sales.

--revoke-operator *<object_DN>*

Removes the object as an operator from the printer's ACL list revoking the explicitly granted printer access.

Removing a user, group, or container from the ACL might not take away the access rights because they might also inherit access based on other permissions.

For example, suppose that the ACL contains user Bob and the group Sales, and Bob is also a member of group Sales. Revoking access from Bob is not sufficient to prohibit Bob's access to the printer. Bob still inherits rights as a member of the group Sales.

--status

Displays the printer status.

--stop

Shuts down the Printer Agent.

Profile Commands

Syntax

```
iprntman profile --list [platform] <options>
iprntman profile --import ["profile1,profile2,.."] <options>
```

Example

```
iprntman profile --list
```

-l | --list

Lists all the driver profiles on the server. You can also specify the platform (`win9x`, `winnt`, `win2k`, `winxp`, `vista32`, `vista64`, `win732`, `win764`, `win832`, `win864`,`win1032`, `win1064`, `linux`, `mac`)for which you want to list the profiles.

For example, to list the driver profiles for Windows 7 platform, specify the value as Windows 7, Windows 7 (x64), or win764. To list the driver profiles for Windows 8 or 8.1 platform, specify the value as Windows 8/8.1, Windows 8/8.1 (x64), or win864. The profiles for Windows 8 or Windows 8.1 are same.

--import

Imports all the driver profiles from one server to another. You can also specify the profiles to be imported in a comma separated format. The Print Manager must be running on both the servers.

--overwrite

Overwrites the existing profile.

--source-server

Specify the hostname or IP address of the server from where to copy the driver profiles. The Print Manager service must be running on this server.

--source-username

Specify the user (LDAP format) who has the privileges to perform the import operation. For example: cn=admin,o=iPrintAppliance.

--source-password

Specify the password of the user performing the import operation.

Options

Options modify the command specified. General options can be used with all commands in conjunction with target specific options.

General Options

-f | --force

Suppresses the display of interactive confirmation prompts for the delete and other operations.

-p | --passfile *<filename>*

Specifies a file containing a password for the eDirectory user performing the operation. By default, if a password is required, the user is prompted. For security purposes, ensure that your password file is not readable by other users.

-P | --password

Specifies the password for the eDirectory user performing the operation. Use of this option should be limited because other users can see command line options, including the password. Use --passfile instead.

-s | --server *<host>*

Specifies a server host on which to perform the operation, where host is a hostname or IP address. Defaults to localhost.

-u / --*username <username>*

Specifies a username that is in LDAP format, using the FDN of the eDirectory user performing the operation. For example: cn=admin,o=myorganization

-v | --verbose

Determines the level of detail to display about the execution of operations.

-w | --warnings

Disables any warning messages from appearing.

--accept-cert

Automatically accepts any certificates when you make your first IPP connection or your first direct eDirectory access through the JNDI library.

--log-level

Sets the log level to one of these: SEVERE (highest), WARNING, INFO, CONFIG, FINE, FINER, or FINEST.

-mime | --mimetype *<arg>*

MIME type of the file during job submission.

-version | --UserAgentVersion *<arg>*

Version of the User Agent that submits the job.

Driver Store (IDS) Options

--hostname *<hostname>*

When you create URIs for drivers and repositories associated with this IDS, this hostname is used. If it is not specified, it defaults to whatever is specified by --server.

Example: `--server server2.my_company.com --hostname ids.my_company.com`

--use-directory-server *<ds_hostname>*

The directory servers this IDS uses. The hostname can be followed by an optional port, if the directory server is running on a non-standard port. This option can be specified up to three times to designate a primary server and two backup directory servers.

Example: `--use-directory-server ds1.my_company.com use-directory-server ds2.my_company.com`

Driver Options

--from-ids-zip *<zipfile>*

For use with the --upload command. The *<zipfile>* is a `.zip` file that came directly from an iPrint Driver Store. This option is intended to facilitate scripts for IDS backup/restore or IDS synchronization.

--from-ppd *<ppdfile>*

For use with the --upload command. The *<ppdfile>* is a `.ppd` file for Linux or Mac OS X clients.

Print Manager (PSM) Options

--hostname *<hostname>*

Use this hostname when you create URIs for services associated with this Print Manager. If it is not specified, it defaults to whatever is specified by --server. You should use this option with the create (-c) and modify (-m) commands.

Example: `--server server1.my_company.com --hostname printserver.my_company.com`

--use-ids <DN>

Specifies the IDS that printers on this Print Manager will use. This option is required when creating a Print Manager.

Example: `--use-ids cn=ids,ou=print,o=my_company`

--use-directory-server *<ds_hostname>*

The directory server this Print Manager uses. The host name can be followed by an optional port, if the directory server is running on a non-standard port.

Example: `--use-directory-server ds1.my_company.com:663`

Printer Options

--audit-enable <yes|no>

Enables auditing for this printer.

--banner *<banner_name>*

Specifies the banner you want to use for this printer.

Example: `--banner BigBanner`

--container *<container_DN>*

Only valid on printer creation. A directory object corresponding to the printer is created with the DN CN=*<printer_name>*,*<container_DN>*. If this option is not used, the Print Manager's object container is used.

Example: `--container ou=printers,o=my_company`

--description *<description_string>*

Set the description of the printer.

Example: `--description "Marketing color laser printer"`

--direct-print-enabled <yes|no>

Enables or disables iPrint Direct, which lets you print directly to the printer and bypass the Print Manager.

--driver-*<platform>* *<driver_name>*

Set the IDS driver associated with the printer for the specified platform (`win9x`, `winnt`, `win2k`, `winxp`, `win732`, `win764`, `vista32`, `vista64`, `linux`, `mac`). The *driver_name* is the name of the driver in the iPrint Driver Store used by the iPrint Print Manager for the printer.

Example `--driver-winxp "HP 5 Si/Mx"`

--gateway-load-string *<load_string>*

Lets you specify the gateway load string information. This load string is usually used to specify the printer's IP address. You must use the entire syntax, as shown in the example, every time this option is used. This field is required when creating a Printer Agent.

Example: `--gateway -load -string "iprintgw PORT=LPR HOSTNAME=192.168.0.100 PRINTERNAME=PASSTHROUGH"`

If you need to connect to a printer using port 9100, use PORT=RAW.

See `iprintgw` for options that can be passed to the gateway in the load string.

--accounting-load-string*<arg>*

Lets you set the accounting load string for the printer.

--location *<location_string>*

Set the location string of the printer

Example: `--location "Second floor, South West corner"`

--lpr-input-enabled <yes|no>

Allows the printer to accept LPR print jobs.

--profile-*<platform>* *<profile>*

Set the printer profile you want associated with the printer for the specified platform (`win9x`, `winnt`, `win2k`, `winxp`, `win7`, `vista`, `linux`, or `mac`). The *profile* is the name of the profile used by the iPrint Print Manager for the printer.

Example `--profile -winxp "HP 5 Si/Mx A4paper"`

--ssl-required <yes|no>

Specifies whether or not Secure Sockets Layer (SSL) is required for clients to print to this printer.

--auto-driver-update <yes|no>

Enables the printer for automatic driver and profile updates.

iprntman.conf File

The `iprntman.conf` file defines the scope of search when authenticating short user names. You can use either `iprintssl.conf` or `iprntman.conf`. To use `iprintssl.conf`, you must change the `iprintssl.conf` parameter to `yes` in the `iprntman.conf` file. The `iprntman.conf` file is located at `/etc/opt/novell/iprintmgmt/conf/iprntman.conf`, and the `iprintssl.conf` file is located at `/etc/opt/novell/iprint/httpd/conf/iprint_ssl.conf`.

Examples

Creating a Driver Store

Syntax

```
iprntman ids <IDS_DN> -c --hostname <DNS_name> --use-directory-server
<ds_hostname>
```

Example

```
iprntman ids cn=ids1,ou=print,o=my_company -c --hostname
printing.my_company.com --use-directory-server ds.my_company.com
```

Creating a Print Manager

Syntax

```
iprntman psm <print_manager_DN> -c --hostname <DNS_name> --use-ids
<IDS_DN> --use-directory-server <ds_hostname>
```

Example

```
iprntman psm cn=PrintManager1,ou=print,o=my_company -c --hostname
printing.my_company.com --use-ids cn=ids,ou=print,o=my_company --use-
directory-server ds.my_company.com
```

Creating a Printer

Syntax

```
iprntman printer <printer_agent_name> -c --container <container_DN> --
gateway-load-string "iprintgw port=lpr hostaddress=<IP_address>
printername=passthrough"
```

Example

```
iprntman printer "HP Color LaserJet 5000" -c --container
ou=print,o=my_company --gateway-load-string 'iprintgw port=lpr
hostaddress=192.0.34.166 printername=passthrough'
```

Creating a Printer As a Non-Root User

On OES, non-root local users can also create and delete printers.

1. Add the non-root local user to the LUM group.
2. Set the required permissions for the directory by using the command `chmod -R 775 /var/opt/novell/log/iprntmgmt/`.
3. Provide LUM group rights to the directory by using the command `chgrp <group> /var/opt/novell/log/iprintmgmt`.
4. Modify the `Logger.properties` file located at `/opt/novell/iprintmgmt/lib/Logger.properties` by adding `%h` on line 19.

   For example: `java.util.logging.FileHandler.pattern=/var/opt/novell/log/iprintmgmt/%h/iprintman%g.log`.

Log files are created for each user individually.

List Printer Drivers in Repository for Windows 2000

Syntax

```
iprntman driver <repository_name> -l
```

Example

```
iprntman driver driver_windows-nt-5_x86-32_en -l
```

Upload Printer Driver

Syntax

```
iprntman driver <repository_name <driver_name>> --upload
```

Example

```
iprntman driver driver_windows-nt-6.1_x86_32_en --upload --from-ids-zip
/root/drivers/drv.zip
```

Assign Print Driver to Printer

Syntax

```
iprntman printer <printer_agent_name> -m --driver-<platform>
<driver_name>
```

Example

```
iprntman printer "HP LaserJet 4" -m --driver-winxp "HP LaserJet 4Si"
```

Import Driver Profiles from One Server to Another Server

Syntax

```
iprntman profile --import ["profile1, profile2.."] -s <host> -u
<username> -P <password> --source-server <source_servername> --source-
username <source_username> --source-password <source_password>
```

Example

```
iprntman profile --import -s ds.my_company.com -u
cn=admin,o=iPrintAppliance -P novell --source-server 192.168.0.100 --
source-username cn=admin,o=iPrintAppliance  --source-password novell
```

The import command is executed on the server ds.my_company.com. All the driver profiles are imported from the source server *192.168.0.100* to the server *ds.my_company.com*.

Imports specific driver profiles

Syntax

```
iprntman profile --import ["profile1, profile2.."] -s <host> -u
<username> -P <password> --source-server <source_servername> --source-
username <source_username> --source-password <source_password>
```

Example

```
iprntman profile --import "Profile1, Profile 2" -s ds.my_company.com -u
cn=admin,o=iPrintAppliance -P novell --source-server 192.168.0.100 --
source-username cn=admin,o=iPrintAppliance  --source-password novell
```

The import command is executed on the server ds.my_company.com.The driver profiles “Profile1” and “Profile 2” are imported from the source server *192.168.0.100* to the server *ds.my_company.com*.

Overwrites profiles that already exists on the server

Syntax

```
iprntman profile --import ["profile1, profile2.."] --overwrite -s
<host> -u <username> -P <password> --source-server <source_servername>
--source-username <source_username> --source-password <source_password>
```

Example (Profile 2 exists on the ds.my_company.com server)

```
iprntman profile --import "Profile1, Profile 2" --overwrite -s
ds.my_company.com -u cn=admin,o=iPrintAppliance -P novell --source-
server 192.168.0.100 --source-username cn=admin,o=iPrintAppliance  --
source-password novell
```

The import command is executed on the server ds.my_company.com. The driver profile “Profile1” is imported from the source server *192.168.0.100* to the server *ds.my_company.com*. The “Profile 2” on the server is overwritten with the corresponding attributes from the source server *192.168.0.100*.

Enable Auditing and SSL on Printer

Syntax

```
iprntman printer <printer_agent_name> -m --audit-enabled yes --ssl-
required yes
```

Example

```
iprntman printer "HP LaserJet 4" -m --audit-enabled yes --ssl-required
yes
```

Modify Printer Location and Description

Syntax

```
iprntman printer <printer_agent_name> -m --location <location_info> --
description <description_info>
```

Example

```
iprntman printer "HP LaserJet 4" -m --location "Next to front desk" --
description "Color printer with envelope tray"
```

Delete a Printer

Syntax

```
iprntman printer <printer_agent_name> -d
```

Example

```
iprntman printer "HP Color LaserJet 5000" -d
```

Display Information about a Printer

Syntax

```
iprntman printer <printer_agent_name> -i
```

Example

```
iprntman printer "HP LaserJet 4Si" -i
```

Associate Drivers to an Existing Printer

Syntax

```
iprntman printer <printer_agent_name> -m --driver-<platform>
<driver_name>
```

Examples

```
iprntman printer printer1 -m --driver-winxp "HP LaserJet 4200 PCL 5e"
iprntman printer printer1 -m --driver-win2k "HP LaserJet 3200 Series
PCL 5e"
iprntman printer printer1 -m --driver-linux "HP LaserJet 8000 Series"
```

You can list the drivers in the Driver Store by using the following Linux command:

```
ll /var/opt/novell/iprint/resdir/<platform>
```

Files

The `iprintman.keystore` file is available in the user's home directory.

iprntcmd(1)

Name

`iprntcmd` - iprint administrative utility.

SYNTAX

`iprntcmd` *<options> <parameter>*

DESCRIPTION

iprntcmd provides command-line functionality for iPrint administrative tasks on a workstation.

OPTION SUMMARY

You must use quotes around parameters that contain spaces.

OPTIONS

Option type <parameter>

-a | --addprinter *<printer-uri>*

Installs the specified printer.

-c | --clearallpasswords

Clears all saved passwords.

-d | --delprinter *<printer-uri>*

Removes the specified printer.

-d | --delprinter all

Remove all the printers. This option requires your confirmation before removing all the printers.

-d | --delprinter all --force

Remove all the printers. This option removes all the printers forcibly without any user intervention.

-f | --fetchdriverlocal <printer-uri>

Fetches the printer driver on local machine.

-g | --getdefault

Displays the default printer installed on the workstation.

-h | --help

Displays help for the command.

-j | --listjobs *<printer-uri>*

Lists the print jobs for the specified printer that are on the server in a pending or printing state.

-i | --info *<printer-uri>*

Displays the printer information.

--icm-refresh [no-gui]

Applies the iCM settings modified by the administrator. If the [no-gui] option is used, the modified settings are applied but no iCM GUI is displayed.

-l | --listprinters

Lists printers installed on the workstation.

-L | -listprintersonserver *<psm-hostname or psm-address>*

Lists iPrint printers on the specified Print Manager where *psm-hostname* or *psm-address* can be a DNS name or IP address.

-p | --printfile *<printer-uri> <file path>*

Sends a printer-ready file to the specified iPrint printer.

-P | --ppdlist

Lists the PPDs installed on this workstation. This option is only available on a Macintosh client.

-r | --run-listener

Launches the `iprint-listener` process if it is not already running. This option is only available on a Macintosh client.

-r | --purgealljobs <printer-uri>

Purges all jobs of the specified printer. This option is only available on a Windows client.

-s | --setdefault *<printer-uri>*

Sets the specified printer as the default.

-S | --setprimarypsm <IP/DNS>

Sets the PSM address for iCM configuration.

-t | --testpage *<printer-uri>*

Prints a test page to the specified printer.

-T | --tray-icon

Displays an iPrint icon to the notification area and launches the `iprint-listener-gui` process, if it is not running. This option is only available with Macintosh client.

-u | --uploadids *<ids-uri> <ppd path with/without wildcards>*

Uploads the specified PPD files to the indicated driver store where ids_uri is the IP address or DNS name for the driver store, and ppd is the directory path and filename to the PPD files. You can use a wildcard in the PPD filename.

-U | --uploadbroker *<rms-uri> <rms-name> <ppd path with/without wildcards>*

Uploads the specified PPD files to the indicated Broker where rms_uri is the IP address or DNS name for the Broker's associated print manager, rms_name is the username with rights to add drivers to the broker, and ppd is the directory path and filename to the PPD files. You can use a wildcard in the PPD filename.

-v | --version *<psm-hostname or psm-address>*

Displays the server platform and version information where *server_uri* is the URI for the server.

-w | --trustedwebsiteforInternetExplorer *<printer_installation_page_uri>*

Adds the specified URI of the printer installation page to the trusted site list for Internet Explorer.

The trusted site list allows users to view and add the printers directly from the printer IPP site or printer map page, without running the Internet Explorer browser with administrator privileges on Windows Vista.

For example, *http://printing.my_company.com/ipp*.

EXAMPLES

Syntax

`iprntcmd --<option> ipp://<host_address>/ipp/<printer_name>`

Example to add a printer

iprntcmd --addprinter ipp://printing.MyCompany.com/ipp/Printer1

Example to delete a printer

iprntcmd --delprinter ipp://printing.MyCompany.com/ipp/Printer1

Example to get a default printer

iprntcmd --getdefault

Example to list the print jobs

iprntcmd --listjobs ipp://printing.MyCompany.com/ipp/Printer1

Example to get the list of installed printers

iprntcmd --listprinters

Example to get the list of printers on a server

iprntcmd --listprintersonserver printing.MyCompany.com

Example to print a file

iprntcmd --printfile ipp://printing.MyCompany.com/ipp/Printer1 /home/user1/temp.txt

Example to get a list of local ppd files

iprntcmd --ppdlist

Example to set a default printer

iprntcmd --setdefault ipp://printing.MyCompany.com/ipp/Printer1

Example to test a print page

iprntcmd --testpage ipp://printing.MyCompany.com/ipp/Printer1

Example to upload driver <without using a wildcard> to ids

iprntcmd --uploadids printing.MyCompany.com /usr/share/cups/model/HP/LaserJet_4V_4LJ_Pro-lj4dithp.ppd.gz

or

iprntcmd --uploadids 192.168.3.4 /usr/share/cups/model/HP/LaserJet_4V_4LJ_Pro-lj4dithp.ppd.gz

Example to upload driver <using a wildcard> to ids

iprntcmd --uploadids printing.MyCompany.com /usr/share/cups/model/HP/LaserJet_4*

or

iprntcmd --uploadids 192.168.3.4 /usr/share/cups/model/HP/LaserJet_4*

Example to upload drivers (without using a wildcard) to rms

iprntcmd --uploadbroker printing.MyCompany.com rms_name /usr/share/cups/model/HP/LaserJet_4V_4LJ_Pro-lj4dithp.ppd.gz

or

iprntcmd --uploadbroker 192.168.3.4 rms_name /usr/share/cups/model/HP/LaserJet_4V_4LJ_Pro-lj4dithp.ppd.gz

Example to upload drivers (using a wildcard) to rms

iprntcmd --uploadbroker printing.MyCompany.com rms_name /usr/share/cups/model/HP/LaserJet_4*

or

iprntcmd --uploadbroker 1.2.3.4 rms_name /usr/share/cups/model/HP/LaserJet_4*

Example to get iprint server version

iprntcmd --version printing.MyCompany.com

or

iprntcmd --version 192.168.3.4

Example to get information of a printer

iprntcmd --info ipp://printing.MyCompany.com/ipp/Printer1

See Also

iprintman(1)

ipsmd(1)

Name

ipsmd - The daemon for the OES iPrint Services.

Syntax

ipsmd *<options>*

Options

Usage Options:

-c, 'config file'

Lets you specify an alternative ipsmd configuration file.

-m

Lets you run ipsmd without monitor process.

-n

Indicates that ipsmd should not be daemonized.

-R

Lets you run ipsmd as a 'root' user.

-r, 'savedDBFile'

Restores the Managed Object Database from the saved file.

NOTE: Include only the filename without a path.

-x, <XML File>

Lets you import the XML file.

-u

Allows you to enter the username in FQDN LDAP format.

-P

Allows you to enter the password for authentication.

Help Options:

-h, --help

Display the help information and exit.

D Configuring the iPrint HTML Interface

This section discusses the HTML parameters and operations used in the iPrint interface for Internet Explorer 5.5 web browsers. This information is provided to give administrators insight into how to customize their HTML files.

HTML developers can use this information to create and edit customized iPrint Web pages for their companies.

The sample iPrint HTML files are located in the `/var/opt/novell/iprint/htdocs` directory.

- "iPrint Client HTML Interface Description" on page 183
- "HTML Parameters" on page 184
- "Supported Operation Strings" on page 187

iPrint Client HTML Interface Description

The list of operations and identifiers is the same for each browser. The printer name and the operation to be performed are required parameters for all operations except op-client-interface version and op-client-version-info. All other parameters are operation-specific or optional. Operation-specific parameters that are used out of context are ignored.

If the desired output from the plug-in is HTML, a frameset needs to be used. This is to prevent some browsers from failing when they try to write to the document that invoked the plug-in. The name of the frame to receive the HTML page generated by the plug-in can be passed in using the target frame option. This target frame needs to be a named frame in the same frameset as the frame invoking the plug-in.

Internet Explorer Browser Customization

- "HTML Script Example" on page 183
- "HTML Code Example" on page 184

HTML Script Example

The ExecuteRequest() entry point simplifies HTML coding when working with Internet Explorer. It lets you pass/get information from the iPrint without reloading a Web page.

A result type called *object* is implemented and should be used only in conjunction with ExecuteRequest(). You can use ExecuteRequest() and have it return results via HTML, URL, message box, or cookie. All data can be passed via the ExecuteRequest() second parameter. The first parameter is the operation. Both of the parameters are strings.

Syntax: *variable*=*variable*.ExecuteRequest("*operation_string*",*additional_operation strings*);=

```
<object ID=iPrintAccess classid=clsid:36723f97-7aa0-11d4-8919-
ff2d71d0d32c>
</object>
<script Language="javascript1.1">
var pStatus;
var params;
params = "printer-url=" + printerNameHere + "&result-type=object"
pStatus=iPrintAccess.ExecuteRequest("op-printer-get-status", params);
alert(pStatus);
</script>
```

HTML Code Example

The following example defines the interface between HTML pages and the browser plug-in. The HTML element <OBJECT> is used to invoke the Internet Explorer plug-in (`ienipp.ocx`).

```
<OBJECT ID=TESTID
CLASSID="clsid:36723f97-7aa0-11d4-8919-FF2D71D0D32C"
CODEBASE=v:\ipp\ieNIpp\final\novipp.ocx>
<PARAM NAME=operation VALUE=op-printer-get-status>
<PARAM NAME=printer-url VALUE=http://192.168.1.2/ipp/lpr>
<PARAM NAME=result-type VALUE=html>
<PARAM NAME=target-frame VALUE=displayFrameName>
</OBJECT>
```

HTML Parameters

The following parameters can be used to enhance the iPrint HTML pages. They are used in the HTML files as PARAM NAME=*parameter* VALUE=*identifier* statements.

- “call-back-url” on page 185
- “debug” on page 185
- “error-type” on page 185
- “file-path-name” on page 185
- “job-list” on page 186
- “job-list-options” on page 186
- “persistence” on page 186
- “printer-url” on page 186
- “result-type” on page 187
- “target-frame” on page 187

call-back-url

Targets the results from the onchange JavaScript function associated with selecting jobs from the job list. The JavaScript function causes the browser to reload the indicated control frame passing the list of selected jobs as a parameter.

Example:

```
PARAM NAME=call-back-url VALUE=CONTROL.HTM
```

debug

If set to True, displays message boxes with debug and profiling information.

Example:

```
PARAM NAME=debug VALUE=true
```

error-type

Determines how the plug-in reports errors associated with the requested operation. The plug-in has the ability to return the errors.

Option	Description
cookie	Puts the error information in a cookie.
html	Displays results as an HTML page generated by the plug-in.
msgBox	Displays results in a message box.
none	No response.
url	Passes the results as a URL parameter.

The plug-in defaults to the same reply mechanism that is specified in results-type if error-type is not specified.

Example:

```
PARAM NAME=error-type VALUE=html
```

file-path-name

Specifies a printer-ready file that can be passed to the plug-in for printing. This mechanism bypasses the print provider and the printer driver. The printer does not need to be installed on the workstation to use this operation.

Example:

```
PARAM NAME=file-path-name VALUE=directory path\filename
```

job-list

The plug-in can perform several operations on jobs. The job-list parameter is a comma-delimited string of job IDs that indicates which jobs to operate on. A job list with the job ID of -1 is equivalent to selecting all jobs

Example:

```
PARAM NAME=job-list VALUE=3,5,7
```

job-list-options

When the plug-in creates the HTML for job-list, it can add buttons to allow the user to hold, resume, delete, or display information for selected jobs. The job-list-options parameter specifies which of the following possible buttons to display and support:

- op-job-cancel (page 189)
- op-job-get-info (page 189)
- op-job-hold (page 189)
- op-job-release-hold (page 189)

Example:

```
PARAM NAME=job-list-options VALUE=op-job-hold,op-job-release-hold, op-job-
cancel, op-job-get-info
```

persistence

Printer installation can be temporary or permanent. If it is not specified, persistence defaults to persistent. The persistence parameter specifies how long the printer is to be installed for. The choices include the following:

Option	Description
persistent	Printer is not removed.
volatile-date-time	Printer is removed at the indicated time (year, month, day, hour, minute).
volatile-reboot	Printer is removed when the workstation reboots.

Examples:

```
PARAM NAME=persistence VALUE=volatile-reboot
```

```
PARAM NAME=persistence VALUE=volatile-date-time:2004,3,22,8,30
```

printer-url

Indicates which printer the operation should be directed to.

Example:

```
PARAM NAME=printer-url VALUE=ipp://MyPrinter.com/ipp/Printer1
```

result-type

Determines how the plug-in reports the results of the requested operation. The plug-in can return the results in any of the following ways:

Option	Description
cookie	Puts the results in a cookie.
html	Displays results as an HTML page generated by the plug-in.
msgBox	Displays results in a message box.
none	No response.
url	Passes the results as a URL parameter.

The plug-in defaults to none if results-type is not specified.

Example:

```
PARAM NAME=result-type VALUE=html
```

target-frame

Specifies the name of the frame to put the results or error information into. If the operation results type is url, the target frame is the one reloaded with the indicated URL.

Example:

```
PARAM NAME=target-frame VALUE=FrameName
```

Supported Operation Strings

All requests to the plug-in have two required parameters. The first is operation, and the second is result-type. All operations except op-client-interface-version and op-client-version-info require the parameter printer-url. All requests support the optional parameter error-type.

With the exception of op-printer-send-test-page and op-printer-remove, the printer does not need to be installed to use the following operations:

- “op-client-interface version” on page 188
- “op-client-is-printer-installed” on page 188
- “op-client-version-info” on page 188
- “op-job-cancel” on page 189
- “op-job-get-info” on page 189
- “op-job-hold” on page 189
- “op-job-release-hold” on page 189

- "op-printer-get-info" on page 190
- "op-printer-get-status" on page 190
- "op-printer-install" on page 190
- "op-printer-list-all-jobs" on page 190
- "op-printer-pause" on page 191
- "op-printer-purge-jobs" on page 191
- "op-printer-remove" on page 191
- "op-printer-resume" on page 191
- "op-printer-send-file" on page 191
- "op-printer-send-test-page" on page 192

op-client-interface version

Description:	Determines a version associated with the plug-in's HTML interface. Can also determine if a client upgrade needs to be invoked for any other client plug-in/HTML file compatibility issues.
Required information:	None
Supported return types:	URL, Cookie, Object

op-client-is-printer-installed

Description:	Determines if the indicated printer is installed on the workstation.
Required information:	Printer URL
Supported return types:	URL, Cookie, Object

op-client-version-info

Description:	Determines the version of the Novell iPrint Client files running on the workstation.
Required information:	None
Supported return types:	Cookie, URL, Object

op-job-cancel

Description:	Deletes the indicated jobs.
Required information	Printer URL, job-list
Supported return types:	None, Message box, HTML, URL, Cookie

op-job-get-info

Description:	Gets job information for indicated jobs. The information returned depends on the printer's capabilities. This information can include job name, ID, owner, size, bytes processed, hold until, priority, time created, time started printing, and time finished printing.
Required information:	Printer URL, job-list
Supported return types:	Message box, HTML, URL, Cookie

op-job-hold

Description:	Puts a hold on the indicated jobs. A job that is printing might not be held.
Required information:	Printer URL, job-list
Supported return types:	None, Message box, HTML, URL, Cookie

Supported parameter is indefinite.

op-job-release-hold

Description:	Removes the hold on the indicated jobs.
Required information:	Printer URL, job-list
Supported return types:	None, Message box, HTML, URL, Cookie

op-printer-get-info

Description:	Gets additional information about the printer. The information returned depends on the printer's capabilities. This information can include printer location, printer make and model, and supported document formats (PDLs).
Required information:	Printer URL
Supported return types:	Message box, HTML, URL, Cookie

op-printer-get-status

Description:	Gets status information from the indicated printer. The information returned depends on the printer's capabilities. Status can include printer state, printer state reasons, printer state message, printer accepting jobs, and printer job count.
Required information:	Printer URL
Supported return types:	Message box, HTML, URL, Cookie

op-printer-install

Description:	Installs the indicated printer to this workstation.
Required information:	Printer URL
Optional information:	persistence
Supported return types:	None, Message box, HTML, URL, Cookie

op-printer-list-all-jobs

Description:	Lists jobs for this printer.
Required information:	Printer URL
Supported return types:	Message box, HTML, URL, Cookie

op-printer-pause

Description:	Pauses the printer. If results are requested for this operation, the op-printer-get-status operation is executed to provide the new printer status.
Required information:	Printer URL
Supported return types:	None, Message box, HTML, URL, Cookie

op-printer-purge-jobs

Description:	Deletes all jobs for this printer.
Required information:	Printer URL
Supported return types:	None, Message box, HTML, URL, Cookie

op-printer-remove

Description:	Deletes the indicated printer from this workstation.
Required information:	Printer URL
Supported return types:	None, Message box, HTML

op-printer-resume

Description:	Resumes the printer. If results are requested for this operation, the op-printer-get-status operation is executed to provide the new printer status.
Required information:	Printer URL
Supported return types:	None, Message box, HTML, URL, Cookie

op-printer-send-file

Description:	Sends a printer-ready file to this printer.
Required information:	Printer URL, file-path-name
Supported return types:	None, Message box, HTML, URL, Cookie

op-printer-send-test-page

Description:	Sends a test page to this printer.
Required information:	Printer URL
Supported return types:	None, Message box, HTML, URL, Cookie

E Disabling iPrint

If you no longer want iPrint running on a server, you can disable the service by following the steps in the "Disabling OES 2018 SP3 Services" section of the OES 2018 SP3: Installation Guide.

To recover disk space from a Driver Store, you can manually delete the `/resdir` located in `/var/opt/novell/iprint`.

F Error Codes

This chapter includes sets of OES iPrint error codes and the following information for each code listed within the set:

- Error code number (hex or decimal) and its description
- Source
- Explanation
- Possible cause (optional)
- Action (optional)

Error Code List

This section includes the following error codes:

- "0xA00004" on page 195
- "HTTP_UNAUTHORIZED/401" on page 195
- "Add-on Errors" on page 195
- "2146500025" on page 196
- "87" on page 196

0xA00004

Source: iManager

Explanation: The Printer object on which an operation is being attempted does not exist.

Possible Cause: This usually happens when you select a printer from the object browser history, but the actual object has been deleted.

HTTP_UNAUTHORIZED/401

Source: Apache Web server

Explanation: Authentication failed.

Possible Cause: You have provided incorrect user credentials.

Action: Provide correct credentials. For more information on the error, refer to the Apache logs.

Add-on Errors

Source: Windows 2008 with the Internet Explorer 8 browser.

Explanation: On Windows 2008, users are not allowed to run the add-ons on Internet Explorer 8 browsers.

Possible Cause: Your browser is not running as an Administrator or the URL is not a part of the Trusted site list.

Action: Add the iPrint URL to the trusted site list or run your browser as an Administrator.

2146500025

Source: Windows 7 and Windows Vista.

Explanation: Adding a driver to the driver store fails.

Possible Cause: The unsigned drivers are not supported for Windows Vista and Windows 7.

Action: Use a signed driver.

87

Source: OES iPrint Client.

Explanation: The administrator has updated the iPrint Client to version 5.40 then created a profile and associated the profile with a printer. If you install the same printer and you have an earlier version of the iPrint Client on your workstation, you get an error message indicating that `The parameter is incorrect`.

Possible Cause: Administrator has created the profile using the latest version of the iPrint Client version 5.40 and you have an earlier version of the iPrint Client installed on your workstation.

Action: Ignore this error message. Your printer is installed.

You should use the latest version of the iPrint Client on user workstations.

G TIDs for iPrint

This section contains the list of TIDs that are available for iPrint on Linux. These TIDs are located on the OES Support Web site and are listed in this document to provide easy access for online document users.

- "TIDS related to OES Upgrade" on page 197
- "TID for iPrint Direct" on page 197
- "TID for Print Manager/Brokers/Driver Stores" on page 197
- "TIDs for the iPrint Client" on page 197
- "TIDs for Backup and Recovery" on page 198

TIDS related to OES Upgrade

Missing IPP page icons with OES 11 SP2 to OES 2018 upgrade: TID 7017311

TID for iPrint Direct

- **iPrint Direct:** What is iPrint Direct? (http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=7001343&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399257&stateId=0%200%2091401196)

TID for Print Manager/Brokers/Driver Stores

- **Deciding the number of iPrint Brokers/Driver Stores:** Considerations in deciding the number of iPrint Brokers / Driver Stores (http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3281477&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399373&stateId=0%200%2091401305)
- **Copying Printer Drivers between OES Driver Stores:** How to copy Printer Drivers from one OES Driver Store to another (http://www.novell.com/support/php/search.do?cmd=displayKC&docType=kc&externalId=7000237&sliceId=1&docTypeID=DT_TID_1_1&dialogID=2371864&stateId=0%200%202375206)

TIDs for the iPrint Client

- **User Printer Support for Windows 8 and later:** TID 7016874
- **Redirect printers on clients to a different server:** Redirect the iPrint printers on clients to a different server (http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3006726&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399420&stateId=0%200%2091401344)

- **Suppress update messages presented by the iPrint client:** How to suppress update messages (http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3476106&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399420&stateId=0%200%2091401344)
- **Universal Printer Drivers:** iPrint and HP Universal Printer Drivers (http://www.novell.com/support/php/search.do?cmd=displayKC&docType=kc&externalId=7001400&sliceId=1&docTypeID=DT_TID_1_1&dialogID=13326719&stateId=0%200%202375997)

TIDs for Backup and Recovery

- **Disaster Recovery:** Restore Linux Print Manager database in disaster recovery situation (http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=3006957&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399815&stateId=0%200%2091401668)
- **Print Manager unable to read generation number:** iPrint Linux Print Manager unable to read generation number (http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=7000933&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399815&stateId=0%200%2091401668)
- **Missing Printer agents after Print Manager crashes:** Printer agents are missing after Linux Print Manager crashes/ segfaults (http://www.novell.com/support/search.do?cmd=displayKC&docType=kc&externalId=7000747&sliceId=1&docTypeID=DT_TID_1_1&dialogID=91399815&stateId=0%200%2091401668)